Human Secreted Proteins

[1] This application is a continuation-in-part of, and claims benefit under 35 U.S.C. § 119(e) based on copending U.S. Provisional Application No. 60/278,650 filed on March 27, 2001. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending U.S. Utility Application No. 09/833,245, filed on April 12, 2001, and PCT International Application Serial No. US01/11988, filed on April 12, 2001. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06043, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/167,061, filed on November 23, 1999, and U.S. Provisional Application No. 60/124,146, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06012, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/166,989, filed on November 23, 1999, and U.S. Provisional Application No. 60/124,093, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06058, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,654, filed on December 3, 1999, and U.S. Provisional Application No. 60/124,145, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06044, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,661, filed on December 3, 1999, and U.S. Provisional Application No. 60/124,099, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06059, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,622, filed on December 3, 1999, and U.S. Provisional Application No. 60/124,096, filed on March 12, 1999. This application

is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06042, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,663, filed on December 3, 1999, and U.S. Provisional Application No. 60/124,143, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06014, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,665, filed on December 3, 1999, and U.S. Provisional Application No. 60/138,598, filed on June 11, 1999, and U.S. Provisional Application No. 60/124,095, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06013, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,662, filed on December 3, 1999, and U.S. Provisional Application No. 60/138,626, filed on June 11,1999, and U.S. Provisional Application No. 60/125,360, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06049, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,667, filed on December 3, 1999, and U.S. Provisional Application No. 60/138,574, filed on June 11, 1999, and U.S. Provisional Application No. 60/124,144, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06057, filed on March 9, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,666, filed on December 3, 1999, and U.S. Provisional Application No. 60/138,597, filed on June 11, 1999, and U.S. Provisional Application No. 60/124,142, filed on March 12, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06824, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/168,664, filed on December 3, 1999, and U.S. Provisional Application No. 60/125,359, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06765, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,906, filed on December 10, 1999, and

U.S. Provisional Application No. 60/126,051, filed on March 23, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06792, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,980, filed on December 10, 1999, and U.S. Provisional Application No. 60/125,362, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06830, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,910, filed on December 10, 1999, and U.S. Provisional Application No. 60/125,361, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06782, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,936, filed on December 10, 1999, and U.S. Provisional Application No. 60/125,812, filed on March 23, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06822, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,916, filed on December 10, 1999, and U.S. Provisional Application No. 60/126,054, filed on March 23, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06791, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,946, filed on December 10, 1999, and U.S. Provisional Application No. 60/125,815, filed on March 23, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06828, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,616, filed on December 8, 1999, and U.S. Provisional Application No. 60/125,358, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/06823, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,623, filed on December 8, 1999, and U.S. Provisional Application No. 60/125,364, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending

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PCT International Application Serial No. US00/06781, filed on March 16, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/169,617, filed on December 8, 1999, and U.S. Provisional Application No. 60/125,363, filed on March 19, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07505, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/172,410, filed on December 17, 1999, and U.S. Provisional Application No. 60/126,502, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07440, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/172,409, filed on December 17, 1999, and U.S. Provisional Application No. 60/126,503, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07506, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/172,412, filed on December 17, 1999, and U.S. Provisional Application No. 60/126,505, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07507, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/172,408, filed on December 17, 1999, and U.S. Provisional Application No. 60/126,594, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07535, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/172,413, filed on December 17, 1999, and U.S. Provisional Application No. 60/126,511, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07525, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/171,549, filed on December 22, 1999, and U.S. Provisional Application No. 60/126,595, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07534, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No.

60/171,504, filed on December 22, 1999, and U.S. Provisional Application No. 60/126,598, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07483, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/171,552, filed on December 22, 1999, and U.S. Provisional Application No. 60/126,596, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07526, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/171,550, filed on December 22, 1999, and U.S. Provisional Application No. 60/126,600, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07527, filed on March 22, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/171,551, filed on December 22, 1999, and U.S. Provisional Application No. 60/126,501, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07661, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,847, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,504, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07579, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,853, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,509, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07723, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/242,710, filed on October 25, 2000, and U.S. Provisional Application No. 60/174,852, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,506, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07724, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,850, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,510, filed on

March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14929, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,851, filed on January 7, 2000, and U.S. Provisional Application No. 60/138,573, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07722, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,871, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,508, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07578, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,872, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,507, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07726, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/174,877, filed on January 7, 2000, and U.S. Provisional Application No. 60/126,597, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07677, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,064, filed on January 14, 2000, and U.S. Provisional Application No. 60/154,373, filed on September 17, 1999, and U.S. Provisional Application No. 60/126,601, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/07725, filed on March 23, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,063, filed on January 14, 2000, and U.S. Provisional Application No. 60/126,602, filed on March 26, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09070, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,052, filed on January 14, 2000, and U.S. Provisional Application No. 60/128,695, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT

International Application Serial No. US00/08982, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,069, filed on January 14, 2000, and U.S. Provisional Application No. 60/128,696, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/08983, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,068, filed on January 14, 2000, and U.S. Provisional Application No. 60/128,703, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09067, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,929, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,697, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09066, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,926, and U.S. Provisional Application No. 60/128,698, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09068, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/177,050, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,699, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/08981, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/177,166, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,701, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/08980, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,930, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,700, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09071, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/176,931, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,694, filed on

April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/09069, filed on April 6, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/177,049, filed on January 20, 2000, and U.S. Provisional Application No. 60/128,702, filed on April 9, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/15136, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,629, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14926, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,628, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14963, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,631, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/15135, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,632, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14934, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,599, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14933, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,572, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/15137, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,625, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14928, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,633, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of

copending PCT International Application Serial No. US00/14973, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/,138,630, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/14964, filed on June 1, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/138,627, filed on June 11, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/26376, filed on September 26, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/155,808, filed on September 27, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/26371, filed on September 26, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/155,804, filed on September 27, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/26324, filed on September 26, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/155,807, filed on September 27, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/26323, filed on September 26, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/155,805, filed on September 27, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US00/26337, filed on September 26, 2000, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/155,806, filed on September 27, 1999. This application is also a continuation-in-part of, and claims benefit under 35 U.S.C. § 120 of copending PCT International Application Serial No. US01/13318, filed on April 27, 2001, which claims benefit under 35 U.S.C. § 119(e) based on U.S. Provisional Application No. 60/212,142, filed on June 16, 2000, and U.S. Provisional Application No. 60/201,194, filed on May 2, 2000. Each of the above referenced PCT applications were published in the English language. Each of the above referenced priority applications are hereby incorporated by reference in their entireties.

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Field of the Invention

[2] The present invention relates to novel proteins. More specifically, isolated nucleic acid molecules are provided encoding novel polypeptides. Novel polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human polynucleotides and/or polypeptides, and antibodies. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to these novel polypeptides. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

Background of the Invention

[3] Unlike bacterium, which exist as a single compartment surrounded by a membrane, human cells and other eukaryotes are subdivided by membranes into many functionally distinct compartments. Each membrane-bounded compartment, or organelle, contains different proteins essential for the function of the organelle. The cell uses "sorting signals," which are amino acid motifs located within the protein, to target proteins to particular cellular organelles.

[4] One type of sorting signal, called a signal sequence, a signal peptide, or a leader sequence, directs a class of proteins to an organelle called the endoplasmic reticulum (ER). The ER separates the membrane-bounded proteins from all other types of proteins. Once localized to the ER, both groups of proteins can be further directed to another organelle called the Golgi apparatus. Here, the Golgi distributes the proteins to vesicles, including secretory vesicles, the cell membrane, lysosomes, and the other organelles.

[5] Proteins targeted to the ER by a signal sequence can be released into the extracellular space as a secreted protein. For example, vesicles containing secreted proteins can fuse with the cell membrane and release their contents into the extracellular space - a process called exocytosis. Exocytosis can occur constitutively or after receipt of a triggering signal. In the latter case, the proteins are stored in secretory vesicles (or

secretory granules) until exocytosis is triggered. Similarly, proteins residing on the cell membrane can also be secreted into the extracellular space by proteolytic cleavage of a "linker" holding the protein to the membrane.

[6] Thus there exists a clear need for identifying and using novel secreted polynucleotides and polypeptides. Identification and sequencing of human genes is a major goal of modern scientific research. For example, by identifying genes and determining their sequences, scientists have been able to make large quantities of valuable human "gene products." These include human insulin, interferon, Factor VIII, tumor necrosis factor, human growth hormone, tissue plasminogen activator, and numerous other compounds. Additionally, knowledge of gene sequences can provide the key to treatment or cure of genetic diseases (such as muscular dystrophy and cystic fibrosis).

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Summary of the Invention

[7] The present invention relates to novel secreted proteins. More specifically, isolated nucleic acid molecules are provided encoding novel secreted polypeptides. Novel polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human polynucleotides and/or polypeptides, and antibodies. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to these novel polypeptides. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

Detailed Description

Polynucleotides and Polypeptides

Description of Table 1A

[8] Table 1A summarizes information concerning certain polypnucleotides and polypeptides of the invention. The first column provides the gene number in the

application for each clone identifier. The second column provides a unique clone identifier, "Clone ID NO:Z", for a cDNA clone related to each contig sequence disclosed in Table 1A. Third column, the cDNA Clones identified in the second column were deposited as indicated in the third column (i.e. by ATCC Deposit Number and deposit date). Some of the deposits contain multiple different clones corresponding to the same gene. In the fourth column, "Vector" refers to the type of vector contained in the corresponding cDNA Clone identified in the second column. In the fifth column, the nucleotide sequence identified as "NT SEQ ID NO:X" was assembled from partially homologous ("overlapping") sequences obtained from the corresponding cDNA clone identified in the second column and, in some cases, from additional related cDNA clones. The overlapping sequences were assembled into a single contiguous sequence of high redundancy (usually three to five overlapping sequences at each nucleotide position), resulting in a final sequence identified as SEQ ID NO:X. In the sixth column, "Total NT Seq." refers to the total number of nucleotides in the contig sequence identified as SEQ ID NO:X." The deposited clone may contain all or most of these sequences, reflected by the nucleotide position indicated as "5' NT of Clone Seq." (seventh column) and the "3' NT of Clone Seq." (eighth column) of SEQ ID NO:X. In the ninth column, the nucleotide position of SEQ ID NO:X of the putative start codon (methionine) is identified as "5' NT of Start Codon." Similarly , in column ten, the nucleotide position of SEQ ID NO:X of the predicted signal sequence is identified as "5' NT of First AA of Signal Pep." In the eleventh column, the translated amino acid sequence, beginning with the methionine, is identified as "AA SEQ ID NO:Y," although other reading frames can also be routinely translated using known molecular biology techniques. The polypeptides produced by these alternative open reading frames are specifically contemplated by the present invention.

[9] In the twelfth and thirteenth columns of Table 1A, the first and last amino acid position of SEQ ID NO:Y of the predicted signal peptide is identified as "First AA of Sig Pep" and "Last AA of Sig Pep." In the fourteenth column, the predicted first amino acid position of SEQ ID NO:Y of the secreted portion is identified as "Predicted First AA of Secreted Portion". The amino acid position of SEQ ID NO:Y of the last amino acid encoded by the open reading frame is identified in the fifteenth column as "Last AA of ORF".

[10] SEQ ID NO:X (where X may be any of the polynucleotide sequences disclosed in the sequence listing) and the translated SEQ ID NO:Y (where Y may be any of the polypeptide sequences disclosed in the sequence listing) are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, SEQ ID NO:X is useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in the deposited clone. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used, for example, to generate antibodies which bind specifically to proteins containing the polypeptides and the secreted proteins encoded by the cDNA clones identified in Table 1A and/or elsewhere herein

[11] Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

[12] Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and the predicted translated amino acid sequence identified as SEQ ID NO:Y, but also a sample of plasmid DNA containing a human cDNA of the invention deposited with the ATCC, as set forth in Table 1A. The nucleotide sequence of each deposited plasmid can readily be determined by sequencing the deposited plasmid in accordance with known methods

[13] The predicted amino acid sequence can then be verified from such deposits. Moreover, the amino acid sequence of the protein encoded by a particular plasmid can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence.

[14] Also provided in Table 1A is the name of the vector which contains the cDNA plasmid. Each vector is routinely used in the art. The following additional information is provided for convenience.

[15] Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128, 256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. et al., *Nucleic Acids Res. 16:*7583-7600 (1988); Alting-Mees, M. A. and Short, J. M., *Nucleic Acids Res. 17:*9494 (1989)) and pBK (Alting-Mees, M. A. et al., *Strategies 5:*58-61 (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into *E. coli* strain XL-1 Blue, also available from Stratagene

[16] Vectors pSport1, pCMVSport 1.0, pCMVSport 2.0 and pCMVSport 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., et al., *Focus 15:*59 (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR®2.1, which is available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res. 16:*9677-9686 (1988) and Mead, D. *et al., Bio/Technology 9:* (1991).

[17] The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or a deposited cDNA (cDNA Clone ID). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include, but are not limited to, preparing probes or primers from the disclosed sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

[18] Also provided in the present invention are allelic variants, orthologs, and/or species homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of genes corresponding to SEQ ID NO:X and SEQ ID NO:Y using information

from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

[19] The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X and/or a cDNA contained in ATCC Deposit No.Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, and/or a polypeptide encoded by a cDNA contained in ATCC deposit No.Z. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X and/or a polypeptide encoded by the cDNA contained in ATCC Deposit No.Z, are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the complement of the coding strand of the cDNA contained in ATCC Deposit No.Z.

Description of Table 1B

[20] Table 1B summarizes some of the polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID NO:Z), contig sequences (contig identifier (Contig ID:) and contig nucleotide sequence identifier (SEQ ID NO:X)) and further summarizes certain characteristics of these polynucleotides and the polypeptides encoded thereby. The first column provides the gene number in the application for each clone identifier. The second column provides a unique clone identifier, "Clone ID NO:Z", for a cDNA clone related to each contig sequence disclosed in Table 1A and/or 1B. The third column provides a unique contig identifier, "Contig ID:" for each of the contig sequences disclosed in Table 1B. The fourth column provides the sequence identifier, "SEQ ID NO:X", for each of the contig sequences disclosed in Table 1A and/or 1B. The fifth column, "ORF (From-To)", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:X that delineate the preferred open reading frame (ORF) that encodes the amino acid sequence shown in the sequence listing and referenced in Table 1B as SEQ ID NO:Y (column 6). Column 7 lists residues comprising predicted epitopes contained in the polypeptides encoded by each of the preferred ORFs (SEQ ID NO:Y). Identification of potential

immunogenic regions was performed according to the method of Jameson and Wolf (CABIOS, 4; 181-186 (1988)); specifically, the Genetics Computer Group (GCG) implementation of this algorithm, embodied in the program PEPTIDESTRUCTURE (Wisconsin Package v10.0, Genetics Computer Group (GCG), Madison, Wisc.). This method returns a measure of the probability that a given residue is found on the surface of the protein. Regions where the antigenic index score is greater than 0.9 over at least 6 amino acids are indicated in Table 1B as "Predicted Epitopes". In particular embodiments, polypeptides of the invention comprise, or alternatively consist of, one, two, three, four, five or more of the predicted epitopes described in Table 1B. It will be appreciated that depending on the analytical criteria used to predict antigenic determinants, the exact address of the determinant may vary slightly. Column 8, "Tissue Distribution" shows the expression profile of tissue, cells, and/or cell line libraries which express the polynucleotides of the invention. The first number in column 8 (preceding the colon), represents the tissue/cell source identifier code corresponding to the key provided in Table 4. Expression of these polynucleotides was not observed in the other tissues and/or cell libraries tested. For those identifier codes in which the first two letters are not "AR", the second number in column 8 (following the colon), represents the number of times a sequence corresponding to the reference polynucleotide sequence (e.g., SEQ ID NO:X) was identified in the tissue/cell source. Those tissue/cell source identifier codes in which the first two letters are "AR" designate information generated using DNA array technology. Utilizing this technology, cDNAs were amplified by PCR and then transferred, in duplicate, onto the array. Gene expression was assayed through hybridization of first strand cDNA probes to the DNA array. cDNA probes were generated from total RNA extracted from a variety of different tissues and cell lines. Probe synthesis was performed in the presence of ^{33}P dCTP, using oligo(dT) to prime reverse transcription. After hybridization, high stringency washing conditions were employed to remove non-specific hybrids from the array. The remaining signal, emanating from each gene target, was measured using a Phosphorimager. Gene expression was reported as Phosphor Stimulating Luminescence (PSL) which reflects the level of phosphor signal generated from the probe hybridized to each of the gene targets represented on the array. A local background signal subtraction was performed before the total signal generated from each array was used to normalize gene expression between the different hybridizations. The value presented after "[array code]:" represents the mean of the duplicate values, following background subtraction and probe normalization. One of skill

in the art could routinely use this information to identify normal and/or diseased tissue(s) which show a predominant expression pattern of the corresponding polynucleotide of the invention or to identify polynucleotides which show predominant and/or specific tissue and/or cell expression. Column 9 provides the chromosomal location of polynucleotides corresponding to SEQ ID NO:X. Chromosomal location was determined by finding exact matches to EST and cDNA sequences contained in the NCBI (National Center for Biotechnology Information) UniGene database. Given a presumptive chromosomal location, disease locus association was determined by comparison with the Morbid Map, derived from Online Mendelian Inheritance in Man (Online Mendelian Inheritance in Man, OMIM™. McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine (Bethesda, MD) 2000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). If the putative chromosomal location of the Query overlaps with the chromosomal location of a Morbid Map entry, an OMIM identification number is disclosed in column 10 labeled "OMIM Disease Reference(s)". A key to the OMIM reference identification numbers is provided in Table 5.

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Description of Table 1C

[21] Table 1C summarizes additional polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID NO:Z), contig sequences (contig identifier (Contig ID:) contig nucleotide sequence identifiers (SEQ ID NO:X)), and genomic sequences (SEQ ID NO:B). The first column provides a unique clone identifier, "Clone ID NO:Z", for a cDNA clone related to each contig sequence. The second column provides the sequence identifier, "SEQ ID NO:X", for each contig sequence. The third column provides a unique contig identifier, "Contig ID:" for each contig sequence. The fourth column, provides a BAC identifier "BAC ID NO:A" for the BAC clone referenced in the corresponding row of the table. The fifth column provides the nucleotide sequence identifier, "SEQ ID NO:B" for a fragment of the BAC clone identified in column four of the corresponding row of the table. The sixth column, "Exon From-To", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:B which delineate certain polynucleotides of the invention that are also exemplary members of polynucleotide sequences that encode polypeptides of the invention (e.g., polypeptides containing amino acid sequences encoded

by the polynucleotide sequences delineated in column six, and fragments and variants thereof).

Description of Table 1D

[22] Table 1D: In preferred embodiments, the present invention encompasses a method of treating a disease or disorder listed in the "FEATURES OF PROTEIN" sections (below) and also as listed in the "Preferred Indications" column of Table 1D (below); comprising administering to a patient in which such treatment, prevention, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1D (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1D) in an amount effective to treat, prevent, or ameliorate the disease or disorder.

[23] As indicated in Table 1D, the polynucleotides, polypeptides, agonists, or antagonists of the present invention (including antibodies) can be used in assays to test for one or more biological activities. If these polynucleotides and polypeptides do exhibit activity in a particular assay, it is likely that these molecules may be involved in the diseases associated with the biological activity. Thus, the polynucleotides or polypeptides, or agonists or antagonists thereof (including antibodies) could be used to treat the associated disease.

[24] The present invention encompasses methods of preventing, treating, diagnosing, or ameliorating a disease or disorder. In preferred embodiments, the present invention encompasses a method of treating a disease or disorder listed in the "Preferred Indications" column of Table 1D; comprising administering to a patient in which such treatment, prevention, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to treat, prevent, diagnose, or ameliorate the disease or disorder. The first and seccond columns of Table 1D show the "Gene No." and "cDNA Clone ID No.", respectively, indicating certain nucleic acids and proteins (or antibodies against the same) of the invention (including polynucleotide, polypeptide, and antibody fragments or variants thereof) that may be used in preventing, treating, diagnosing, or ameliorating the disease(s) or disorder(s) indicated in the corresponding row in Column 3 of Table 1D.

[25] In another embodiment, the present invention also encompasses methods of preventing, treating, diagnosing, or ameliorating a disease or disorder listed in the "Preferred Indications" column of Table 1D; comprising administering to a patient

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combinations of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in Column 3 of Table 1D.

[26] The "Preferred Indication" column describes diseases, disorders, and/or conditions that may be treated, prevented, diagnosed, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

[27] The recitation of "Cancer" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof) may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., leukemias, cancers, and/or as described below under "Hyperproliferative Disorders").

[28] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D may be used for example, to diagnose, treat, prevent, and/or ameliorate a neoplasm located in a tissue selected from the group consisting of: colon, abdomen, bone, breast, digestive system, liver, pancreas, prostate, peritoneum, lung, blood (e.g., leukemia), endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), uterus, eye, head and neck, nervous (central and peripheral), lymphatic system, pelvic, skin, soft tissue, spleen, thoracic, and urogenital.

[29] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a pre-neoplastic condition, selected from the group consisting of: hyperplasia (e.g., endometrial hyperplasia and/or as described in the section entitled "Hyperproliferative Disorders"), metaplasia (e.g., connective tissue metaplasia, atypical metaplasia, and/or as described in the section entitled "Hyperproliferative Disorders"), and/or dysplasia (e.g., cervical dysplasia, and bronchopulmonary dysplasia).

[30] In another specific embodiment, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a benign dysproliferative disorder selected from the group consisting of: benign tumors, fibrocystic conditions, tissue hypertrophy, and/or as described in the section entitled "Hyperproliferative Disorders".

[31] The recitation of "Immune/Hematopoietic" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

[32] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having the "Immune/Hematopoietic" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, asthma, AIDS, autoimmune disease, rheumatoid arthritis, granulomatous disease, immune deficiency, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, systemic lupus erythematosis, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and allergies.

[33] The recitation of "Reproductive" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the reproductive system (e.g., as described below under "Reproductive System Disorders").

[34] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Reproductive" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cryptorchism, prostatitis, inguinal hernia, varicocele, leydig cell tumors, verrucous carcinoma, prostatitis, malacoplakia, Peyronie's disease, penile carcinoma, squamous cell hyperplasia, dysmenorrhea, ovarian adenocarcinoma, Turner's syndrome, mucopurulent cervicitis, Sertoli-leydig tumors, ovarian cancer, uterine cancer, pelvic inflammatory disease, testicular cancer, prostate cancer, Klinefelter's syndrome, Young's syndrome,

premature ejaculation, diabetes mellitus, cystic fibrosis, Kartagener's syndrome, testicular atrophy, testicular feminization, anorchia, ectopic testis, epididymitis, orchitis, gonorrhea, syphilis, testicular torsion, vasitis nodosa, germ cell tumors, stromal tumors, dysmenorrhea, retroverted uterus, endometriosis, fibroids, adenomyosis, anovulatory bleeding, amenorrhea, Cushing's syndrome, hydatidiform moles, Asherman's syndrome, premature menopause, precocious puberty, uterine polyps, dysfunctional uterine bleeding, cervicitis, chronic cervicitis, mucopurulent cervicitis, cervical dysplasia, cervical polyps, Nabothian cysts, cervical erosion, cervical incompetence, cervical neoplasms, pseudohermaphroditism, and premenstrual syndrome.

[35] The recitation of "Musculoskeletal" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the immune system (e.g., as described below under "Immune Activity").

[36] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Musculoskeletal" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bone cancers (e.g., osteochondromas, benign chondromas, chondroblastoma, chondromyxoid fibromas, osteoid osteomas, giant cell tumors, multiple myeloma, osteosarcomas), Paget's Disease, rheumatoid arthritis, systemic lupus erythematosus, osteomyelitis, Lyme Disease, gout, bursitis, tendonitis, osteoporosis, osteoarthritis, muscular dystrophy, mitochondrial myopathy, cachexia, and multiple sclerosis.

[37] The recitation of "Cardiovascular" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders").

[38] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cardiovascular" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: myxomas,

fibromas, rhabdomyomas, cardiovascular abnormalities (e.g., congenital heart defects, cerebral arteriovenous malformations, septal defects), heart disease (e.g., heart failure, congestive heart disease, arrhythmia, tachycardia, fibrillation, pericardial Disease, endocarditis), cardiac arrest, heart valve disease (e.g., stenosis, regurgitation, prolapse), vascular disease (e.g., hypertension, coronary artery disease, angina, aneurysm, arteriosclerosis, peripheral vascular disease), hyponatremia, hypernatremia, hypokalemia, and hyperkalemia.

[39] The recitation of "Mixed Fetal" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders").

[40] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Mixed Fetal" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: spina bifida, hydranencephaly, neurofibromatosis, fetal alcohol syndrome, diabetes mellitus, PKU, Down's syndrome, Patau syndrome, Edwards syndrome, Turner syndrome, Apert syndrome, Carpenter syndrome, Conradi syndrome, Crouzon syndrome, cutis laxa, Cornelia de Lange syndrome, Ellis-van Creveld syndrome, Holt-Oram syndrome, Kartagener syndrome, Meckel-Gruber syndrome, Noonan syndrome, Pallister-Hall syndrome, Rubinstein-Taybi syndrome, Scimitar syndrome, Smith-Lemli-Opitz syndrome, thromocytopenia-absent radius (TAR) syndrome, Treacher Collins syndrome, Williams syndrome, Hirschsprung's disease, Meckel's diverticulum, polycystic kidney disease, Turner's syndrome, and gonadal dysgenesis, Klippel-Feil syndrome, Ostogenesis imperfecta, muscular dystrophy, Tay-Sachs disease, Wilm's tumor, neuroblastoma, and retinoblastoma.

[41] The recitation of "Excretory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and renal disorders (e.g., as described below under "Renal Disorders").

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[42] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Excretory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bladder cancer, prostate cancer, benign prostatic hyperplasia, bladder disorders (e.g., urinary incontinence, urinary retention, urinary obstruction, urinary tract Infections, interstitial cystitis, prostatitis, neurogenic bladder, hematuria), renal disorders (e.g., hydronephrosis, proteinuria, renal failure, pyelonephritis, urolithiasis, reflux nephropathy, and unilateral obstructive uropathy).

[43] The recitation of "Neural/Sensory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the nervous system (e.g., as described below under "Neural Activity and Neurological Diseases").

[44] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Neural/Sensory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: brain cancer (e.g., brain stem glioma, brain tumors, central nervous system (Primary) lymphoma, central nervous system lymphoma, cerebellar astrocytoma, and cerebral astrocytoma, neurodegenerative disorders (e.g., Alzheimer's Disease, Creutzfeldt-Jakob Disease, Parkinson's Disease, and Idiopathic Presenile Dementia), encephalomyelitis, cerebral malaria, meningitis, metabolic brain diseases (e.g., phenylketonuria and pyruvate carboxylase deficiency), cerebellar ataxia, ataxia telangiectasia, and AIDS Dementia Complex, schizophrenia, attention deficit disorder, hyperactive attention deficit disorder, autism, and obsessive compulsive disorders.

[45] The recitation of "Respiratory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders").

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[46] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Respiratory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of the respiratory system such as larynx cancer, pharynx cancer, trachea cancer, epiglottis cancer, lung cancer, squamous cell carcinomas, small cell (oat cell) carcinomas, large cell carcinomas, and adenocarcinomas. Allergic reactions, cystic fibrosis, sarcoidosis, histiocytosis X, infiltrative lung diseases (e.g., pulmonary fibrosis and lymphoid interstitial pneumonia), obstructive airway diseases (e.g., asthma, emphysema, chronic or acute bronchitis), occupational lung diseases (e.g., silicosis and asbestosis), pneumonia, and pleurisy.

[47] The recitation of "Endocrine" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders"), renal disorders (e.g., as described below under "Renal Disorders"), and disorders of the endocrine system (e.g., as described below under "Endocrine Disorders".

[48] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having an "Endocrine" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of endocrine tissues and organs (e.g., cancers of the hypothalamus, pituitary gland, thyroid gland, parathyroid glands, pancreas, adrenal glands, ovaries, and testes), diabetes (e.g., diabetes insipidus, type I and type II diabetes mellitus), obesity, disorders related to pituitary glands (e.g., hyperpituitarism, hypopituitarism, and pituitary dwarfism), hypothyroidism, hyperthyroidism, goiter, reproductive disorders (e.g. male and female infertility), disorders related to adrenal glands (e.g., Addison's Disease, corticosteroid deficiency, and Cushing's Syndrome), kidney cancer (e.g., hypernephroma, transitional cell cancer, and Wilm's tumor), diabetic nephropathy, interstitial nephritis, polycystic kidney disease, glomerulonephritis (e.g., IgM mesangial proliferative glomerulonephritis and glomerulonephritis caused by autoimmune disorders; such as Goodpasture's syndrome), and nephrocalcinosis.

[49] The recitation of "Digestive" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the gastrointestinal system (e.g., as described below under "Gastrointestinal Disorders".

[50] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Digestive" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: ulcerative colitis, appendicitis, Crohn's disease, hepatitis, hepatic encephalopathy, portal hypertension, cholelithiasis, cancer of the digestive system (e.g., biliary tract cancer, stomach cancer, colon cancer, gastric cancer, pancreatic cancer, cancer of the bile duct, tumors of the colon (e.g., polyps or cancers), and cirrhosis), pancreatitis, ulcerative disease, pyloric stenosis, gastroenteritis, gastritis, gastric atropy, benign tumors of the duodenum, distension, irritable bowel syndrome, malabsorption, congenital disorders of the small intestine, bacterial and parasitic infection, megacolon, Hirschsprung's disease, aganglionic megacolon, acquired megacolon, colitis, anorectal disorders (e.g., anal fistulas, hemorrhoids), congenital disorders of the liver (e.g., Wilson's disease, hemochromatosis, cystic fibrosis, biliary atresia, and alpha1-antitrypsin deficiency), portal hypertension, cholelithiasis, and jaundice.

[51] The recitation of "Connective/Epithelial" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level "), angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity "), and or to promote or inhibit regeneration (e.g., as described below under "Regeneration "), and wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

[52] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Connective/Epithelial" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of:

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metaplasia, mixed connective tissue disease, focal epithelial hyperplasia, epithelial metaplasia, mucoepithelial dysplasia, graft v. host disease, polymyositis, cystic hyperplasia, cerebral dysplasia, tissue hypertrophy, Alzheimer's disease, lymphoproliferative disorder, Waldenstron's macroglobulinemia, Crohn's disease, pernicious anemia, idiopathic Addison's disease, glomerulonephritis, bullous pemphigoid, Sjogren's syndrome, diabetes mellitus, cystic fibrosis, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, osteoporosis, osteocarthritis, periodontal disease, wound healing, relapsing polychondritis, vasculitis, polyarteritis nodosa, Wegener's granulomatosis, cellulitis, rheumatoid arthritis, psoriatic arthritis, discoid lupus erythematosus, systemic lupus erythematosus, scleroderma, CREST syndrome, Sjogren's syndrome, polymyositis, dermatomyositis, mixed connective tissue disease, relapsing polychondritis, vasculitis, Henoch-Schonlein syndrome, erythema nodosum, polyarteritis nodosa, temporal (giant cell) arteritis, Takayasu's arteritis, Wegener's granulomatosis, Reiter's syndrome, Behcet's syndrome, ankylosing spondylitis, cellulitis, keloids, Ehler Danlos syndrome, Marfan syndrome, pseudoxantoma elasticum, osteogenese imperfecta, chondrodysplasias, epidermolysis bullosa, Alport syndrome, and cutis laxa.

Description of Table 1E

[53] Table 1E provides information related to biological activities and preferred indications for polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof). Table 1E also provides information related to assays which may be used to test polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) for the corresponding biological activities. The first column ("Gene No.") provides the gene number in the application for each clone identifier. The second column ("cDNA Clone ID No:Z") provides the unique clone identifier for each clone as previously described and indicated in Tables 1A, 1B, 1C, and 1D. The third column ("AA SEQ ID NO:Y") indicates the Sequence Listing SEQ ID Number for polypeptide sequences encoded by the corresponding cDNA clones (also as indicated in Tables 1A, 1B, and 2). The fourth column ("Biological Activity") indicates a biological activity corresponding to the indicated polypeptides (or polynucleotides encoding said polypeptides). The fifth column ("Exemplary Activity Assay") further describes the corresponding biological activity and provides information pertaining to the various types of assays which may be performed to test, demonstrate, or quantify the corresponding biological activity. The sixth column ("Preferred Indications") describes particular embodiments of the invention and indications (e.g. pathologies, diseases, disorders, abnormalities, etc.) for which

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polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) may be used in detecting, diagnosing, preventing, and/or treating.

[54] Table 1E describes the use of FMAT technology, *inter alia*, for testing or demonstrating various biological activities. Fluorometric microvolume assay technology (FMAT) is a fluorescence-based system which provides a means to perform nonradioactive cell- and bead-based assays to detect activation of cell signal transduction pathways. This technology was designed specifically for ligand binding and immunological assays. Using this technology, fluorescent cells or beads at the bottom of the well are detected as localized areas of concentrated fluorescence using a data processing system. Unbound flurophore comprising the background signal is ignored, allowing for a wide variety of homogeneous assays. FMAT technology may be used for peptide ligand binding assays, immunofluorescence, apoptosis, cytotoxicity, and bead-based immunocapture assays. *See*, Miraglia S et. al., "Homogeneous cell and bead based assays for highthroughput screening using flourometric microvolume assay technology," Journal of Biomolecular Screening; 4:193-204 (1999). In particular, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides (including polypeptide fragments and variants) to activate signal transduction pathways. For example, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides to upregulate production of immunomodulatory proteins (such as, for example, interleukins, GM-CSF, Rantes, and Tumor Necrosis factors, as well as other cellular regulators (e.g. insulin)).

[55] Table 1E also describes the use of kinase assays for testing, demonstrating, or quantifying biological activity. In this regard, the phosphorylation and de-phosphorylation of specific amino acid residues (e.g. Tyrosine, Serine, Threonine) on cell-signal transduction proteins provides a fast, reversible means for activation and de-activation of cellular signal transduction pathways. Moreover, cell signal transduction via phosphorylation/de-phosphorylation is crucial to the regulation of a wide variety of cellular processes (e.g. proliferation, differentiation, migration, apoptosis, etc.). Accordingly, kinase assays provide a powerful tool useful for testing, confirming, and/or identifying polypeptides (including polypeptide fragments and variants) that mediate cell signal transduction events via protein phosphorylation. See e.g., Forrer, P., Tamaskovic R., and Jaussi, R. "Enzyme-Linked Immunosorbent Assay for Measurement of JNK, ERK, and p38 Kinase Activities" Biol. Chem. 379(8-9): 1101-1110 (1998).

Description of Table 2

[56] Table 2 summarizes homology and features of some of the polypeptides of the invention. The first column provides a unique clone identifier, "Clone ID NO:Z", corresponding to a cDNA clone disclosed in Table 1A or 1B. The second column provides the unique contig identifier, "Contig ID:" corresponding to contigs in Table 1B and allowing for correlation with the information in Table 1B. The third column provides the sequence identifier, "SEQ ID NO:X", for the contig polynucleotide sequence. The fourth column provides the analysis method by which the homology/identity disclosed in the Table was determined. Comparisons were made between polypeptides encoded by the polynucleotides of the invention and either a non-redundant protein database (herein referred to as "NR"), or a database of protein families (herein referred to as "PFAM") as further described below. The fifth column provides a description of the PFAM/NR hit having a significant match to a polypeptide of the invention. Column six provides the accession number of the PFAM/NR hit disclosed in the fifth column. Column seven, "Score/Percent Identity", provides a quality score or the percent identity, of the hit disclosed in columns five and six. Columns 8 and 9, "NT From" and "NT To" respectively, delineate the polynucleotides in "SEQ ID NO:X" that encode a polypeptide having a significant match to the PFAM/NR database as disclosed in the fifth and sixth columns. In specific embodiments polypeptides of the invention comprise, or alternatively consist of, an amino acid sequence encoded by a polynucleotide in SEQ ID NO:X as delineated in columns 8 and 9, or fragments or variants thereof.

Description of Table 3

[57] Table 3 provides polynucleotide sequences that may be disclaimed according to certain embodiments of the invention. The first column provides a unique clone identifier, "Clone ID", for a cDNA clone related to contig sequences disclosed in Table 1B. The second column provides the sequence identifier, "SEQ ID NO:X", for contig sequences disclosed in Table 1A and/or 1B. The third column provides the unique contig identifier,

"Contig ID:", for contigs disclosed in Table 1B. The fourth column provides a unique integer 'a' where 'a' is any integer between 1 and the final nucleotide minus 15 of SEQ ID NO:X, and the fifth column provides a unique integer 'b' where 'b' is any integer between 15 and the final nucleotide of SEQ ID NO:X, where both a and b correspond to the positions of nucleotide residues shown in SEQ ID NO:X, and where b is greater than or equal to a + 14. For each of the polynucleotides shown as SEQ ID NO:X, the uniquely defined integers can be substituted into the general formula of a-b, and used to describe polynucleotides which may be preferably excluded from the invention. In certain embodiments, preferably excluded from the invention are at least one, two, three, four, five, ten, or more of the polynucleotide sequence(s) having the accession number(s) disclosed in the sixth column of this Table (including for example, published sequence in connection with a particular BAC clone). In further embodiments, preferably excluded from the invention are the specific polynucleotide sequence(s) contained in the clones corresponding to at least one, two, three, four, five, ten, or more of the available material having the accession numbers identified in the sixth column of this Table (including for example, the actual sequence contained in an identified BAC clone).

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Description of Table 4

[58] Table 4 provides a key to the tissue/cell source identifier code disclosed in Table 1B, column 8. Column 1 provides the tissue/cell source identifier code disclosed in Table 1B, Column 8. Columns 2-5 provide a description of the tissue or cell source. Codes corresponding to diseased tissues are indicated in column 6 with the word "disease". The use of the word "disease" in column 6 is non-limiting. The tissue or cell source may be specific (e.g. a neoplasm), or may be disease-associated (e.g., a tissue sample from a normal portion of a diseased organ). Furthermore, tissues and/or cells lacking the "disease" designation may still be derived from sources directly or indirectly involved in a disease state or disorder, and therefore may have a further utility in that disease state or disorder. In numerous cases where the tissue/cell source is a library, column 7 identifies the vector used to generate the library.

Description of Table 5

[59] Table 5 provides a key to the OMIM reference identification numbers disclosed in Table 1B, column 10. OMIM reference identification numbers (Column 1) were derived from Online Mendelian Inheritance in Man (Online Mendelian Inheritance in

Man, OMIM. McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine, (Bethesda, MD) 2000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). Column 2 provides diseases associated with the cytologic band disclosed in Table 1B, column 9, as determined using the Morbid Map database.

Description of Table 6

[60] Table 6 summarizes some of the ATCC Deposits, Deposit dates, and ATCC designation numbers of deposits made with the ATCC in connection with the present application. These deposits were made in addition to those described in the Table 1A.

Description of Table 7

[61] Table 7 shows the cDNA libraries sequenced, and ATCC designation numbers and vector information relating to these cDNA libraries.

[62] The first column shows the first four letters indicating the Library from which each library clone was derived. The second column indicates the catalogued tissue description for the corresponding libraries. The third column indicates the vector containing the corresponding clones. The fourth column shows the ATCC deposit designation for each libray clone as indicated by the deposit information in Table 6.

Definitions

[63] The following definitions are provided to facilitate understanding of certain terms used throughout this specification.

[64] In the present invention, "isolated" refers to material removed from its original environment (e.g., the natural environment if it is naturally occurring), and thus is altered "by the hand of man" from its natural state. For example, an isolated polynucleotide could be part of a vector or a composition of matter, or could be contained within a cell, and still be "isolated" because that vector, composition of matter, or particular cell is not the original environment of the polynucleotide. The term "isolated" does not refer to genomic or cDNA libraries, whole cell total or mRNA preparations, genomic DNA preparations

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(including those separated by electrophoresis and transferred onto blots), sheared whole cell genomic DNA preparations or other compositions where the art demonstrates no distinguishing features of the polynucleotide/sequences of the present invention.

[65] In the present invention, a "secreted" protein refers to those proteins capable of being directed to the ER, secretory vesicles, or the extracellular space as a result of a signal sequence, as well as those proteins released into the extracellular space without necessarily containing a signal sequence. If the secreted protein is released into the extracellular space, the secreted protein can undergo extracellular processing to produce a "mature" protein. Release into the extracellular space can occur by many mechanisms, including exocytosis and proteolytic cleavage.

[66] As used herein, a "polynucleotide" refers to a molecule having a nucleic acid sequence encoding SEQ ID NO:Y or a fragment or variant thereof (e.g., the polypeptide delinated in columns fourteen and fifteen of Table 1A); a nucleic acid sequence contained in SEQ ID NO:X (as described in column 5 of Table 1A and/or column 3 of Table 1B) or the complement thereof; a cDNA sequence contained in Clone ID NO:Z (as described in column 2 of Table 1A and/or 1B and contained within a library deposited with the ATCC); a nucleotide sequence encoding the polypeptide encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 (EXON From-To) of Table 1C or a fragment or variant thereof; or a nucleotide coding sequence in SEQ ID NO:B as defined in column 6 of Table 1C or the complement thereof. For example, the polynucleotide can contain the nucleotide sequence of the full length cDNA sequence, including the 5' and 3' untranslated sequences, the coding region, as well as fragments, epitopes, domains, and variants of the nucleic acid sequence. Moreover, as used herein, a "polypeptide" refers to a molecule having an amino acid sequence encoded by a polynucleotide of the invention as broadly defined (obviously excluding poly-Phenylalanine or poly-Lysine peptide sequences which result from translation of a polyA tail of a sequence corresponding to a cDNA).

[67] In the present invention, "SEQ ID NO:X" was often generated by overlapping sequences contained in multiple clones (contig analysis). A representative clone containing all or most of the sequence for SEQ ID NO:X is deposited at Human Genome Sciences, Inc. (HGS) in a catalogued and archived library. As shown, for example, in

column 2 of Table 1B, each clone is identified by a cDNA Clone ID (identifier generally referred to herein as Clone ID NO:Z). Each Clone ID is unique to an individual clone and the Clone ID is all the information needed to retrieve a given clone from the HGS library. Table 7 provides a list of the deposited cDNA libraries. One can use the Clone ID NO:Z to determine the library source by reference to Tables 6 and 7. Table 7 lists the deposited cDNA libraries by name and links each library to an ATCC Deposit. Library names contain four characters, for example, "HTWE." The name of a cDNA clone (Clone ID) isolated from that library begins with the same four characters, for example "HTWEP07". As mentioned below, Table 1A and/or 1B correlates the Clone ID names with SEQ ID NO:X. Thus, starting with an SEQ ID NO:X, one can use Tables 1A, 1B, 6, 7, and 9 to determine the corresponding Clone ID, which library it came from and which ATCC deposit the library is contained in. Furthermore, it is possible to retrieve a given cDNA clone from the source library by techniques known in the art and described elsewhere herein. The ATCC is located at 10801 University Boulevard, Manassas, Virginia 20110-2209, USA. The ATCC deposits were made pursuant to the terms of the Budapest Treaty on the international recognition of the deposit of microorganisms for the purposes of patent procedure.

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[68] In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (i.e., 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

[69] A "polynucleotide" of the present invention also includes those polynucleotides capable of hybridizing, under stringent hybridization conditions, to sequences contained in SEQ ID NO:X, or the complement thereof (e.g., the complement of any one, two, three, four, or more of the polynucleotide fragments described herein), the polynucleotide sequence delineated in columns 7 and 8 of Table 1A or the complement thereof, the

polynucleotide sequence delineated in columns 8 and 9 of Table 2 or the complement thereof, and/or cDNA sequences contained in Clone ID NO:Z (e.g., the complement of any one, two, three, four, or more of the polynucleotide fragments, or the cDNA clone within the pool of cDNA clones deposited with the ATCC, described herein), and/or the polynucleotide sequence delineated in column 6 of Table 1C or the complement thereof. "Stringent hybridization conditions" refers to an overnight incubation at 42 degree C in a solution comprising 50% formamide, 5x SSC (750 mM NaCl, 75 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 μg/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1x SSC at about 65 degree C.

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[70] Also contemplated are nucleic acid molecules that hybridize to the polynucleotides of the present invention at lower stringency hybridization conditions. Changes in the stringency of hybridization and signal detection are primarily accomplished through the manipulation of formamide concentration (lower percentages of formamide result in lowered stringency); salt conditions, or temperature. For example, lower stringency conditions include an overnight incubation at 37 degree C in a solution comprising 6X SSPE (20X SSPE = 3M NaCl; 0.2M NaH_2PO_4; 0.02M EDTA, pH 7.4), 0.5% SDS, 30% formamide, 100 ug/ml salmon sperm blocking DNA; followed by washes at 50 degree C with 1XSSPE, 0.1% SDS. In addition, to achieve even lower stringency, washes performed following stringent hybridization can be done at higher salt concentrations (e.g. 5X SSC).

[71] Note that variations in the above conditions may be accomplished through the inclusion and/or substitution of alternate blocking reagents used to suppress background in hybridization experiments. Typical blocking reagents include Denhardt's reagent, BLOTTO, heparin, denatured salmon sperm DNA, and commercially available proprietary formulations. The inclusion of specific blocking reagents may require modification of the hybridization conditions described above, due to problems with compatibility.

[72] Of course, a polynucleotide which hybridizes only to polyA+ sequences (such as any 3' terminal polyA+ tract of a cDNA shown in the sequence listing), or to a complementary stretch of T (or U) residues, would not be included in the definition of

"polynucleotide," since such a polynucleotide would hybridize to any nucleic acid molecule containing a poly (A) stretch or the complement thereof (e.g., practically any double-stranded cDNA clone generated using oligo dT as a primer).

[73] The polynucleotide of the present invention can be composed of any polyribonucleotide or polydeoxribonucleotide, which may be unmodified RNA or DNA or modified RNA or DNA. For example, polynucleotides can be composed of single- and double-stranded DNA, DNA that is a mixture of single- and double-stranded regions, single- and double-stranded RNA, and RNA that is mixture of single- and double-stranded regions, hybrid molecules comprising DNA and RNA that may be single-stranded or, more typically, double-stranded or a mixture of single- and double-stranded regions. In addition, the polynucleotide can be composed of triple-stranded regions comprising RNA or DNA or both RNA and DNA. A polynucleotide may also contain one or more modified bases or DNA or RNA backbones modified for stability or for other reasons. "Modified" bases include, for example, tritylated bases and unusual bases such as inosine. A variety of modifications can be made to DNA and RNA; thus, "polynucleotide" embraces chemically, enzymatically, or metabolically modified forms.

[74] In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (i.e., 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

[75] "SEQ ID NO:X" refers to a polynucleotide sequence described in column 5 of Table 1A, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 10 of Table 1A. SEQ ID NO:X is identified by an integer specified in column 6 of Table 1A. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. The polynucleotide sequences are shown in the

sequence listing immediately followed by all of the polypeptide sequences. Thus, a polypeptide sequence corresponding to polynucleotide sequence SEQ ID NO:2 is the first polypeptide sequence shown in the sequence listing. The second polypeptide sequence corresponds to the polynucleotide sequence shown as SEQ ID NO:3, and so on.

[76] The polypeptide of the present invention can be composed of amino acids joined to each other by peptide bonds or modified peptide bonds, i.e., peptide isosteres, and may contain amino acids other than the 20 gene-encoded amino acids. The polypeptides may be modified by either natural processes, such as posttranslational processing, or by chemical modification techniques which are well known in the art. Such modifications are well described in basic texts and in more detailed monographs, as well as in a voluminous research literature. Modifications can occur anywhere in a polypeptide, including the peptide backbone, the amino acid side-chains and the amino or carboxyl termini. It will be appreciated that the same type of modification may be present in the same or varying degrees at several sites in a given polypeptide. Also, a given polypeptide may contain many types of modifications. Polypeptides may be branched, for example, as a result of ubiquitination, and they may be cyclic, with or without branching. Cyclic, branched, and branched cyclic polypeptides may result from posttranslation natural processes or may be made by synthetic methods. Modifications include acetylation, acylation, ADP-ribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphotidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent cross-links, formation of cysteine, formation of pyroglutamate, formylation, gamma-carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristoylation, oxidation, pegylation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination. (See, for instance, PROTEINS - STRUCTURE AND MOLECULAR PROPERTIES, 2nd Ed., T. E. Creighton, W. H. Freeman and Company, New York (1993); POSTTRANSLATIONAL COVALENT MODIFICATION OF PROTEINS, B. C. Johnson, Ed., Academic Press, New York, pgs. 1-12 (1983); Seifter et al., Meth. Enzymol. 182:626-646 (1990); Rattan et al., Ann. N.Y. Acad. Sci. 663:48-62 (1992)).

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[77] "SEQ ID NO:X" refers to a polynucleotide sequence described, for example, in Tables 1A, 1B or 2, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 11 of Table 1A and or column 6 of Table 1B. SEQ ID NO:X is identified by an integer specified in column 4 of Table 1B. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. "Clone ID NO:Z" refers to a cDNA clone described in column 2 of Table 1A and/or 1B.

[78] "A polypeptide having functional activity" refers to a polypeptide capable of displaying one or more known functional activities associated with a full-length (complete) protein. Such functional activities include, but are not limited to, biological activity, antigenicity [ability to bind (or compete with a polypeptide for binding) to an anti-polypeptide antibody], immunogenicity (ability to generate antibody which binds to a specific polypeptide of the invention), ability to form multimers with polypeptides of the invention, and ability to bind to a receptor or ligand for a polypeptide.

[79] The polypeptides of the invention can be assayed for functional activity (e.g. biological activity) using or routinely modifying assays known in the art, as well as assays described herein. Specifically, one of skill in the art may routinely assay secreted polypeptides (including fragments and variants) of the invention for activity using assays as described in the examples section below.

[80] "A polypeptide having biological activity" refers to a polypeptide exhibiting activity similar to, but not necessarily identical to, an activity of a polypeptide of the present invention, including mature forms, as measured in a particular biological assay, with or without dose dependency. In the case where dose dependency does exist, it need not be identical to that of the polypeptide, but rather substantially similar to the dose-dependence in a given activity as compared to the polypeptide of the present invention (i.e., the candidate polypeptide will exhibit greater activity or not more than about 25-fold less and, preferably, not more than about tenfold less activity, and most preferably, not more than about three-fold less activity relative to the polypeptide of the present invention).

TABLE 1A

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
1	H6BSF56	203917 04/08/99	Uni-ZAP XR	11	605	44	605		83	515	1	6	7	141
2	H6EDM64	203959 04/26/99	Uni-ZAP XR	12	2610	1275	2377	1448	1448	516	1			6
3	H6EEC72	PTA-793 09/27/99	Uni-ZAP XR	13	1493	1	1493		263	517	1	13	14	18
4	HACAB68	203917 04/08/99	Uni-ZAP XR	14	1300	1	1300	135	135	518	1	26	27	78
5	HACBJ56	203979 04/29/99	Uni-ZAP XR	15	888	1	888		250	519	1	9	10	25
6	HACBS22	203979 04/29/99	Uni-ZAP XR	16	3239	1	3239	217	217	520	1	23	24	41
7	HADDE71	203917 04/08/99	pSport1	17	667	1	667	250	250	521	1	28	29	139
8	HADDJ13	203917 04/08/99	pSport1	18	2318	1	2318	347	347	522	1	20	21	30
9	HADMB15	203979 04/29/99	pBluescript	19	330	1	330		238	523	1	11	12	20

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
10	HAGBQ12	203917 04/08/99	Uni-ZAP XR	20	743	1	743	171	171	524	1	19	20	21
11	HAGDW20	203917 04/08/99	Uni-ZAP XR	21	1284	1	1284	238	238	525	1	16	17	17
12	HAGEG10	203917 04/08/99	Uni-ZAP XR	22	5684	100	2890	146	146	526	1	29	30	55
13	HAGEQ79	203917 04/08/99	Uni-ZAP XR	23	785	1	785	515	515	527	1			11
14	HAGFS57	203979 04/29/99	Uni-ZAP XR	24	874	1	874	241	241	528	1	26	27	54
15	HAGHN57	203917 04/08/99	Uni-ZAP XR	25	2440	843	2440	900	900	529	1			10
16	HAHEA15	203979 04/29/99	Uni-ZAP XR	26	1346	1	1346	196	196	530	1			13
17	HAJAA47	203917 04/08/99	pCMVSport 3.0	27	1237	1	1237		192	531	1	15	16	38
18	HAJAY92	203959 04/26/99	pCMVSport 3.0	28	2345	1	2345	12	12	532	1	20	21	94
19	HAJBV67	PTA-181 06/07/99	pCMVSport 3.0	29	2536	1	2536	605	605	533	1	19	20	359
20	HAJCH70	203917 04/08/99	pCMVSport 3.0	30	2182	1	2182	284	284	534	1	32	33	38

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
21	HAOAG15	203979 04/29/99	pSport1	31	5143	7	4802		8	535	1	22	23	1167
22	HAQAI92	203917 04/08/99	Uni-ZAP XR	32	607	1	602	250	250	536	1	15	16	23
23	HAQCE11	203917 04/08/99	Uni-ZAP XR	33	596	1	596		262	537	1			3
24	HATBI94	203917 04/08/99	Uni-ZAP XR	34	1380	1	1380	18	18	538	1	20	21	68
25	HATCB45	203917 04/08/99	Uni-ZAP XR	35	903	1	903	268	268	539	1	16	17	42
26	HATCD80	203917 04/08/99	Uni-ZAP XR	36	1809	95	1809	296	296	540	1	23	24	37
27	HATCI03	203917 04/08/99	Uni-ZAP XR	37	934	1	934	271	271	541	1			17
28	HATEH20	203917 04/08/99	Uni-ZAP XR	38	850	1	850	93	93	542	1	19	20	42
29	HBAGD86	203917 04/08/99	pSport1	39	1713	293	1596	521	521	543	1	18	19	19
30	HBCJL35	PTA-794 09/27/99	pSport1	40	720	1	720	17	17	544	1	27	28	124

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
30	HBCJL35	PTA-794 09/27/99	pSport1	511	2878	1027	1747	1033	1033	1015	1	27	28	124
31	HBDAB91	203917 04/08/99	pSport1	41	687	1	687	351	351	545	1	19	20	29
32	HBDAB91	203917 04/08/99	pSport1	42	1007	320	1007	671	671	546	1	19	20	29
33	HBGBC29	203917 04/08/99	Uni-ZAP XR	43	1856	764	1829		1016	547	1			2
34	HBGNC72	PTA-793 09/27/99	Uni-ZAP XR	44	802	1	802		550	548	1	8	9	76
35	HBHAA05	203917 04/08/99	Uni-ZAP XR	45	690	1	690		110	549	1	16	17	58
36	HBHAA81	203959 04/26/99	Uni-ZAP XR	46	1647	1	1647	28	28	550	1	24	25	203
37	HBIAA59	203917 04/08/99	Uni-ZAP XR	47	2392	1612	2392	1877	1877	551	1	15	16	136
38	HBIAC29	203917 04/08/99	Uni-ZAP XR	48	1782	808	1545	1036	1036	552	1	24	25	29
39	HBICW51	203917 04/08/99	Uni-ZAP XR	49	619	1	619		289	553	1	16	17	42

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
40	HBJAB02	203917 04/08/99	Uni-ZAP XR	50	1693	1	1665	84	84	554	1	27	28	34
41	HBJAC65	203917 04/08/99	Uni-ZAP XR	51	1685	1	892	137	137	555	1	13	14	23
42	HBJBM12	203917 04/08/99	Uni-ZAP XR	52	1135	1	1135	47	47	556	1			31
43	HBJCR46	203917 04/08/99	Uni-ZAP XR	53	3208	2270	3202	589	589	557	1	1	2	733
44	HBJDS79	203917 04/08/99	Uni-ZAP XR	54	2325	896	2325	1032	1032	558	1	37	38	107
45	HBJDW56	203917 04/08/99	Uni-ZAP XR	55	637	1	637		121	559	1			8
46	HBJEL16	203979 04/29/99	Uni-ZAP XR	56	750	1	750	115	115	560	1	24	25	36
47	HBJFK45	203917 04/08/99	Uni-ZAP XR	57	543	1	543		430	561	1			8
48	HBJIG20	PTA-181 06/07/99	Uni-ZAP XR	58	637	1	637		321	562	1	16	17	77
49	HBJKD16	203979 04/29/99	Uni-ZAP XR	59	1629	1	1629	78	78	563	1	18	19	31
50	HBMBM96	203917 04/08/99	pBluescript	60	1076	1	1076		170	564	1			4

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
51	HBMBX01	203917 04/08/99	pBluescript	61	1652	179	1458	363	363	565	1	18	19	28
52	HBMTM11	203917 04/08/99	Uni-ZAP XR	62	1639	1	1639	125	125	566	1	19	20	31
53	HBMTX26	203917 04/08/99	Uni-ZAP XR	63	1308	1	1308	107	107	567	1	46	47	89
54	HBMTY48	203917 04/08/99	Uni-ZAP XR	64	1891	1	1891	660	660	568	1	36	37	94
55	HBMUH74	PTA-181 06/07/99	Uni-ZAP XR	65	726	1	726	344	344	569	1	13	14	28
56	HBMWE61	203917 04/08/99	Uni-ZAP XR	66	1118	1	1118	238	238	570	1			9
57	HBNAX40	203917 04/08/99	Uni-ZAP XR	67	2793	2455	2793	2497	2497	571	1	18	19	49
58	HBNBJ76	203917 04/08/99	Uni-ZAP XR	68	1974	1469	1974		1603	572	1	29	30	68
59	HBQAB79	203917 04/08/99	Lambda ZAP II	69	1331	1	1331	190	190	573	1			11
60	HBQAC57	203917 04/08/99	Lambda ZAP II	70	2111	1	2111	146	146	574	1			29

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
61	HBSAK32	PTA-181 06/07/99	Uni-ZAP XR	71	592	129	592	447	447	575	1	27	28	48
62	HBXCM66	203917 04/08/99	ZAP Express	72	1010	41	1010	119	119	576	1			16
63	HBXCX15	203917 04/08/99	ZAP Express	73	1219	1	1219		1148	577	1			1
64	HCDCY76	203917 04/08/99	Uni-ZAP XR	74	1392	628	1392		860	578	1	17	18	35
65	HCDDL48	203917 04/08/99	Uni-ZAP XR	75	813	1	813	333	333	579	1	12	13	40
66	HCE1G78	203917 04/08/99	Uni-ZAP XR	76	1896	1	1896	77	77	580	1	17	18	254
67	HCE2H52	203979 04/29/99	Uni-ZAP XR	77	1276	1	1276		29	581	1	15	16	23
68	HCE3B04	203917 04/08/99	Uni-ZAP XR	78	1807	1347	1806		1588	582	1	13	14	32
69	HCE5F78	203917 04/08/99	Uni-ZAP XR	79	1732	282	1732		566	583	1	8	9	32
70	HCEDR26	203917 04/08/99	Uni-ZAP XR	80	1419	1	1419	177	177	584	1	26	27	55
71	HCEEE79	203917 04/08/99	Uni-ZAP XR	81	1052	1	1052	131	131	585	1	15	16	55

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
72	HCEEQ25	203917 04/08/99	Uni-ZAP XR	82	992	1	992		111	586	1	15	16	23
73	HCEEU18	203917 04/08/99	Uni-ZAP XR	83	1229	1	1229	209	209	587	1	30	31	43
74	HCEFZ82	203917 04/08/99	Uni-ZAP XR	84	1811	44	1781	215	215	588	1	16	17	265
75	HCEGX05	203917 04/08/99	Uni-ZAP XR	85	1305	1	1305	237	237	589	1			15
76	HCFLN88	203917 04/08/99	pSport1	86	1434	1	1434	101	101	590	1	16	17	25
77	HCFLT90	203917 04/08/99	pSport1	87	910	1	735		384	591	1			1
78	HCHAB84	203979 04/29/99	pSport1	88	1359	62	1359		304	592	1	23	24	147
79	HCMSX51	203917 04/08/99	Uni-ZAP XR	89	2253	334	2190		539	593	1.	31	32	80
80	HCNCO11	203917 04/08/99	Lambda ZAP II	90	746	1	746	101	101	594	1			14
81	HCNSD29	PTA-181 06/07/99	pBluescript	91	1728	1031	1633	1145	1145	595	1	19	20	31
82	HCQBH72	203917 04/08/99	Lambda ZAP II	92	1796	776	1796	31	31	596	1	25	26	47

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
83	HCQCC96	203979 04/29/99	Lambda ZAP II	93	2166	632	1455	782	782	597	1	20	21	45
84	HCQCJ56	203917 04/08/99	Lambda ZAP II	94	1287	1	1287		728	598	1			1
85	HCQCM24	203979 04/29/99	Lambda ZAP II	95	1929	606	1929	815	815	599	1			38
86	HCRAY10	203917 04/08/99	Uni-ZAP XR	96	788	1	788		141	600	1	36	37	145
87	HCRBF72	203917 04/08/99	Uni-ZAP XR	97	1264	101	1142	191	191	601	1	1	2	211
88	HCRNF78	203917 04/08/99	pSport1	98	892	1	892	363	363	602	1	22	23	46
89	HCUAF85	203917 04/08/99	ZAP Express	99	597	1	597	230	230	603	1	23	24	122
90	HCUCF89	203917 04/08/99	ZAP Express	100	530	1	530	189	189	604	1	18	19	29
91	HCUCK44	203957 04/26/99	ZAP Express	101	1143	578	1136	598	598	605	1	30	31	60
92	HCUDD64	203917 04/08/99	ZAP Express	102	402	150	389	256	256	606	1	35	36	49
93	HCWAE64	203917 04/08/99	ZAP Express	103	471	1	471		410	607	1			5

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
94	HCWFU39	203917 04/08/99	ZAP Express	104	467	1	467	282	282	608	1	9	10	22
95	HCWUL09	203917 04/08/99	ZAP Express	105	761	3	761	333	333	609	1			11
96	HDHAA42	203917 04/08/99	pCMVSport 2.0	106	943	1	943	48	48	610	1	25	26	26
97	HDHEB76	203917 04/08/99	pCMVSport 2.0	107	497	1	497		416	611	1	11	12	12
98	HDPCW16	203960 04/26/99	pCMVSport 3.0	108	1536	1	1536	172	172	612	1	38	39	55
99	HDPDI72	PTA-794 09/27/99	pCMVSport 3.0	109	1550	1	1550	23	23	613	1	17	18	120
100	HDPDJ58	203960 04/26/99	pCMVSport 3.0	110	1997	1	1997	279	279	614	1			20
101	HDPFF10	PTA-181 06/07/99	pCMVSport 3.0	111	2582	3	2582	186	186	615	1	19	20	425
102	HDPFU43	203960 04/26/99	pCMVSport 3.0	112	1904	1	1889	220	220	616	1	28	29	52
103	HDPFY18	203918 04/08/99	pCMVSport 3.0	113	2187	1	2187	161	161	617	1			7

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
104	HDPGE24	203960 04/26/99	pCMVSport 3.0	114	2625	1	2625	173	173	618	1	11	12	73
105	HDPIU94	203960 04/26/99	pCMVSport 3.0	115	2196	21	2196	208	208	619	1	21	22	23
106	HDPOC24	203960 04/26/99	pCMVSport 3.0	116	1777	302	1725	418	418	620	1	23	24	133
107	HDPOL37	203960 04/26/99	pCMVSport 3.0	117	1489	1	1489	189	189	621	1	32	33	62
108	HDPOO76	203960 04/26/99	pCMVSport 3.0	118	645	1	645		109	622	1	15	16	16
109	HDPPD93	203960 04/26/99	pCMVSport 3.0	119	701	1	701	28	28	623	1			12
110	HDPPQ30	203960 04/26/99	pCMVSport 3.0	120	1063	1	1063	220	220	624	1	22	23	38
111	HDPPW82	203959 04/26/99	pCMVSport 3.0	121	552	1	552	395	395	625	1			29
112	HDPXN20	203960 04/26/99	pCMVSport 3.0	122	1756	1	1756	61	61	626	1	20	21	41
113	HDQHM36	PTA-181 06/07/99	pCMVSport 3.0	123	1547	1	1547	129	129	627	1	18	19	48
114	HDTAU35	203960 04/26/99	pCMVSport 2.0	124	377	1	377	260	260	628	1	12	13	17

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
115	HDTAV54	203960 04/26/99	pCMVSport 2.0	125	660	1	660	191	191	629	1	22	23	33
116	HDTFX18	203960 04/26/99	pCMVSport 2.0	126	678	1	678	164	164	630	1	16	17	20
117	HDTGW48	203960 04/26/99	pCMVSport 2.0	127	2261	1	2261		375	631	1	17	18	29
118	HDTLM18	203960 04/26/99	pCMVSport 2.0	128	525	1	525	345	345	632	1	18	19	60
119	HE2CA60	203960 04/26/99	Uni-ZAP XR	129	1663	308	1663	360	360	633	1			7
120	HE2CA60	203960 04/26/99	Uni-ZAP XR	130	3034	1679	3034	1731	1731	634	1			7
121	HE2CH58	203960 04/26/99	Uni-ZAP XR	131	809	1	809	321	321	635	1	8	9	52
122	HE2CM39	203960 04/26/99	Uni-ZAP XR	132	566	1	566		10	636	1			13
123	HE2HC60	203960 04/26/99	Uni-ZAP XR	133	1569	236	1569	273	273	637	1	16	17	39
124	HE2PO93	203960 04/26/99	Uni-ZAP XR	134	1323	638	1323	770	770	638	1	27	28	42
125	HE6AU52	203960 04/26/99	Uni-ZAP XR	135	845	1	845	41	41	639	1	18	19	41

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
126	HE6CS65	203960 04/26/99	Uni-ZAP XR	136	1526	1	1526		295	640	1	10	11	62
127	HE6DO92	203960 04/26/99	Uni-ZAP XR	137	941	1	941	38	38	641	1	20	21	25
128	HE6EY13	203979 04/29/99	Uni-ZAP XR	138	867	1	867	171	171	642	1	14	15	46
129	HE6FU11	203979 04/29/99	Uni-ZAP XR	139	2000	1	1994	145	145	643	1	26	27	226
130	HE6FV29	203960 04/26/99	Uni-ZAP XR	140	1526	1	1526	210	210	644	1	18	19	33
131	HE8FC45	203979 04/29/99	Uni-ZAP XR	141	1887	1	1887	155	155	645	1	33	34	47
132	HE8FC45	203979 04/29/99	Uni-ZAP XR	142	1887	1	1887	155	155	646	1	33	34	47
133	HE8FD92	203979 04/29/99	Uni-ZAP XR	143	1995	1	1978	157	157	647	1	25	26	43
134	HE8FD92	203979 04/29/99	Uni-ZAP XR	144	2908	918	2891	1074	1074	648	1	25	26	43
135	HE8FD92	203979 04/29/99	Uni-ZAP XR	145	4907	2918	4890		2	649	1	1	2	471
136	HE8FD92	203979 04/29/99	Uni-ZAP XR	146	4102	2114	4085	2268	2268	650	1	25	26	43

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
137	HE8FD92	203979 04/29/99	Uni-ZAP XR	147	3977	1986	3960	2141	2141	651	1	25	26	43
138	HE8SG96	PTA-181 06/07/99	Uni-ZAP XR	148	2036	1	2036	118	118	652	1	17	18	24
139	HE8TY46	PTA-1838 05/09/00	Uni-ZAP XR	149	2204	1400	2204	1413	1413	653	1	18	19	187
140	HE9CY05	203960 04/26/99	Uni-ZAP XR	150	1047	47	1047	55	55	654	1	21	22	235
141	HE9EA10	203960 04/26/99	Uni-ZAP XR	151	2114	1	2111		212	655	1	28	29	78
142	HE9GG20	203960 04/26/99	Uni-ZAP XR	152	676	1	676	319	319	656	1			9
143	HEBCI18	203960 04/26/99	Uni-ZAP XR	153	1121	713	1050	855	855	657	1	43	44	69
144	HEBCY54	203960 04/26/99	Uni-ZAP XR	154	1189	1	1189	172	172	658	1	24	25	118
145	HEBDF77	203960 04/26/99	Uni-ZAP XR	155	1820	1	1820	681	681	659	1	29	30	36
146	HEBDQ91	203960 04/26/99	Uni-ZAP XR	156	1573	1007	1573		1211	660	1	29	30	41

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
147	HEBFR46	203979 04/29/99	Uni-ZAP XR	157	1304	1	1304	200	200	661	1	26	27	29
148	HEBGE07	203960 04/26/99	Uni-ZAP XR	158	1867	1	1867	106	106	662	1	25	26	42
149	HEGAU15	203960 04/26/99	Uni-ZAP XR	159	1125	1	1125	59	59	663	1	30	31	34
150	HELAT35	203960 04/26/99	Uni-ZAP XR	160	2168	1	2168	215	215	664	1			20
151	HELBU54	203960 04/26/99	Uni-ZAP XR	161	1260	1	1260	82	82	665	1			17
152	HELGG84	203960 04/26/99	Uni-ZAP XR	162	1109	12	1109	147	147	666	1	16	17	22
153	HELGG84	203960 04/26/99	Uni-ZAP XR	163	1109	12	1109	147	147	667	1	16	17	22
154	HEMEY47	203979 04/29/99	Uni-ZAP XR	164	1614	204	1614	440	440	668	1			10
155	HEOMC46	PTA-181 06/07/99	pSport1	165	939	1	939		154	669	1	40	41	51
156	HEPBA14	PTA-181 06/07/99	Uni-ZAP XR	166	746	1	746		664	670	1	13	14	15

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
157	HEQAH80	203960 04/26/99	pCMVSport 3.0	167	1647	1	1647	150	150	671	1	26	27	32
158	HEQBF89	203960 04/26/99	pCMVSport 3.0	168	859	1	859	306	306	672	1	18	19	50
159	HETCI16	203979 04/29/99	Uni-ZAP XR	169	2285	73	2285	237	237	673	1	27	28	40
160	HETDW58	203979 04/29/99	Uni-ZAP XR	170	1533	328	1533	541	541	674	1	16	17	22
161	HETEY67	203960 04/26/99	Uni-ZAP XR	171	1778	1	1778		292	675	1	13	14	66
162	HFCDW95	203979 04/29/99	Uni-ZAP XR	172	871	1	871		151	676	1			2
163	HFCEI04	203960 04/26/99	Uni-ZAP XR	173	887	1	887		136	677	1	17	18	42
164	HFCFD04	203960 04/26/99	Uni-ZAP XR	174	1437	1	1437	170	170	678	1			15
165	HFCFE20	203960 04/26/99	Uni-ZAP XR	175	1205	1	1205	216	216	679	1			18
166	HFEAY59	203960 04/26/99	Uni-ZAP XR	176	1153	1	1153	154	154	680	1	24	25	40
167	HFGAJ16	203960 04/26/99	Uni-ZAP XR	177	866	1	866	40	40	681	1	22	23	31

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
168	HFIHZ75	203960 04/26/99	pSport1	178	1280	454	1165	700	700	682	1	21	22	51
169	HFIJA29	203960 04/26/99	pSport1	179	1275	110	1275	175	175	683	1	27	28	82
170	HFIJA68	203979 04/29/99	pSport1	180	1157	1	1157	283	283	684	1	22	23	43
171	HFKES05	203960 04/26/99	Uni-ZAP XR	181	1885	1	1885	243	243	685	1	17	18	42
172	HFKEU12	203960 04/26/99	Uni-ZAP XR	182	1031	1	1031	6	6	686	1	16	17	55
173	HFPCZ55	203960 04/26/99	Uni-ZAP XR	183	2735	341	2735	676	676	687	1	24	25	44
174	HFPDR62	203960 04/26/99	Uni-ZAP XR	184	2644	1	2644	414	414	688	1	28	29	35
175	HFPDS07	203960 04/26/99	Uni-ZAP XR	185	3115	2302	3114	2546	2546	689	1	23	24	25
176	HFRAB10	203960 04/26/99	Uni-ZAP XR	186	1419	1	1419	203	203	690	1	27	28	45
177	HFTBM38	203960 04/26/99	Uni-ZAP XR	187	1941	322	1941	577	577	691	1	18	19	30
178	HFTDH56	PTA-181 06/07/99	Uni-ZAP XR	188	820	1	820	67	67	692	1			10

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
179	HFVGK35	203960 04/26/99	pBluescript	189	1236	1	1236		14	693	1			5
180	HFVHW43	203960 04/26/99	pBluescript	190	1233	1	1233	92	92	694	1	30	31	39
181	HFXAV37	203960 04/26/99	Lambda ZAP II	191	1520	40	1520		163	695	1	13	14	36
182	HFXBN86	PTA-181 06/07/99	Lambda ZAP II	192	1379	1	1379	149	149	696	1	25	26	65
183	HFXBT66	203960 04/26/99	Lambda ZAP II	193	1001	1	1001	172	172	697	1	15	16	26
184	HFXFZ46	203960 04/26/99	Lambda ZAP II	194	1378	1	1378	258	258	698	1			6
185	HGBER72	203960 04/26/99	Uni-ZAP XR	195	1316	1	1316	43	43	699	1	16	17	19
186	HGBEY14	203960 04/26/99	Uni-ZAP XR	196	1738	1	1738	233	233	700	1	18	19	39
187	HGBGN34	203960 04/26/99	Uni-ZAP XR	197	528	1	528		280	701	1	32	33	48
188	HGBHP91	203960 04/26/99	Uni-ZAP XR	198	1054	1	1054		50	702	1	14	15	52
189	HGCAC19	203960 04/26/99	pSport1	199	5061	23	1475		317	703	1			9

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
190	HGCAC19	203960 04/26/99	pSport1	200	1534	23	1534		317	704	1			9
191	HGCAC19	203960 04/26/99	pSport1	201	1771	21	1473		315	705	1			9
192	HHEAK45	203960 04/26/99	pCMVSport 3.0	202	2014	87	1935		813	706	1			3
193	HHEGS55	PTA-181 06/07/99	pCMVSport 3.0	203	594	2	594	159	159	707	1	16	17	36
194	HHEOW19	PTA-793 09/27/99	pCMVSport 3.0	204	1589	1	1589	183	183	708	1	18	19	64
195	HHFFF87	203960 04/26/99	Uni-ZAP XR	205	1547	1	1547	229	229	709	1			41
196	HHFFL34	203960 04/26/99	Uni-ZAP XR	206	2632	1	2632	42	42	710	1	21	22	223
197	HHFFS40	203960 04/26/99	Uni-ZAP XR	207	1816	1	1816	37	37	711	1	18	19	47
198	HHGCS78	203960 04/26/99	Lambda ZAP II	208	575	46	575	290	290	712	1	17	18	24
199	HHGDT26	203960 04/26/99	Lambda ZAP II	209	1584	1	1584	181	181	713	1			8

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
200	HHPFU28	203960 04/26/99	Uni-ZAP XR	210	1838	1	1838		156	714	1	18	19	27
201	HHPSA85	203960 04/26/99	pBluescript	211	1147	1	1147	157	157	715	1	28	29	38
202	HHSBI06	203959 04/26/99	Uni-ZAP XR	212	1049	27	803		690	716	1			5
203	HHSBI65	203917 04/08/99	Uni-ZAP XR	213	1444	1	1431	62	62	717	1	17	18	55
204	HHSDI53	PTA-181 06/07/99	Uni-ZAP XR	214	1277	1	1277	221	221	718	1	14	15	24
205	HHSFC09	203960 04/26/99	Uni-ZAP XR	215	531	1	531		380	719	1	10	11	32
206	HHSGL28	203960 04/26/99	Uni-ZAP XR	216	1093	1	1093	453	453	720	1			6
207	HILCA24	203960 04/26/99	pBluescript SK-	217	1980	151	1976	189	189	721	1	29	30	327
208	HILCA24	203960 04/26/99	pBluescript SK-	218	1982	153	1982	191	191	722	1	29	30	327
209	HISAT67	203959 04/26/99	pSport1	219	2154	1061	2142	1239	1239	723	1	35	36	56
210	HJBCU75	203957 04/26/99	pBluescript SK-	220	1009	1	1009	61	61	724	1			5

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
211	HJMAA03	203957 04/26/99	pCMVSport 3.0	221	665	1	665		527	725	1			9
212	HJMAV41	PTA-181 06/07/99	pCMVSport 3.0	222	1017	1	1017	207	207	726	1			27
213	HJMAY90	203959 04/26/99	pCMVSport 3.0	223	2886	2233	2886		2492	727	1	22	23	34
214	HJPBE39	203957 04/26/99	Uni-ZAP XR	224	1298	69	1298		170	728	1			18
215	HJPBK28	203957 04/26/99	Uni-ZAP XR	225	989	1	989		256	729	1	21	22	43
216	HJPCH08	203959 04/26/99	Uni-ZAP XR	226	879	1	879		374	730	1	10	11	117
217	HKABU43	203959 04/26/99	pCMVSport 2.0	227	1919	581	1919	755	755	731	1	20	21	281
218	HKACI79	PTA-181 06/07/99	pCMVSport 2.0	228	1181	1	1181	207	207	732	1	14	15	50
219	HKAFF50	203957 04/26/99	pCMVSport 2.0	229	1801	1	1801	343	343	733	1	13	14	50
220	HKGBF25	203957 04/26/99	pSport1	230	2007	1	2007	261	261	734	1	18	19	36

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
221	HKIXC44	203957 04/26/99	pBluescript	231	788	343	750	572	572	735	1	26	27	36
222	HKMLK03	203957 04/26/99	pBluescript	232	1049	1	1049	214	214	736	1			11
223	HKMLM95	203957 04/26/99	pBluescript	233	1098	1	1098		390	737	1			4
224	HKTAB41	203957 04/26/99	Uni-ZAP XR	234	797	1	797	172	172	738	1			10
225	HLDBG17	PTA-181 06/07/99	pCMVSport 3.0	235	652	1	652	184	184	739	1	23	24	41
226	HLDCA54	203979 04/29/99	pCMVSport 3.0	236	1815	425	1815	550	550	740	1	26	27	46
227	HLDQU79	203959 04/26/99	pCMVSport 3.0	237	1488	1	1488	99	99	741	1	23	24	348
227	HLDQU79	203959 04/26/99	pCMVSport 3.0	512	3179	163	1474	75	75	1016	1	29	30	348
228	HLDRT09	203957 04/26/99	pCMVSport 3.0	238	721	254	665	522	522	742	1	20	21	66
229	HLHAP05	203957 04/26/99	Uni-ZAP XR	239	1842	12	1842	45	45	743	1			14
230	HLHCS23	203957 04/26/99	Uni-ZAP XR	240	1427	1	1427	25	25	744	1	24	25	34

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
231	HLIBO72	PTA-792 09/27/99	pCMVSport 1	241	1768	1	1768	167	167	745	1	46	47	127
232	HLICE88	203957 04/26/99	pCMVSport 1	242	840	401	824		708	746	1			2
233	HLICO10	203957 04/26/99	pCMVSport 1	243	903	1	903	441	441	747	1	23	24	72
234	HLJBS28	203957 04/26/99	pCMVSport 1	244	976	1	976	359	359	748	1			17
235	HLMBW89	203957 04/26/99	Lambda ZAP II	245	622	1	622	47	47	749	1	19	20	21
236	HLMGP50	203957 04/26/99	Lambda ZAP II	246	1063	1	1063	214	214	750	1			10
237	HLMJB64	203957 04/26/99	Lambda ZAP II	247	804	1	804	12	12	751	1	29	30	49
238	HLMMX62	203957 04/26/99	Lambda ZAP II	248	268	1	268	185	185	752	1	17	18	28
239	HLQAS12	PTA-793 09/27/99	Lambda ZAP II	249	2450	1	2450	305	305	753	1	11	12	12
240	HLQCL64	PTA-181 06/07/99	Lambda ZAP II	250	2385	1652	2385		3	754	1	1	2	182

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
241	HLQCX36	203957 04/26/99	Lambda ZAP II	251	1243	1	1243	89	89	755	1	16	17	52
242	HLWAF06	203957 04/26/99	pCMVSport 3.0	252	2564	1	2564	192	192	756	1	18	19	30
243	HLWAU42	203957 04/26/99	pCMVSport 3.0	253	2495	1542	2488	1751	1751	757	1	17	18	57
244	HLWAU42	203957 04/26/99	pCMVSport 3.0	254	947	1	947	220	220	758	1	17	18	57
245	HLWAV47	PTA-795 09/27/99	pCMVSport 3.0	255	2062	1	2062	200	200	759	1	29	30	32
246	HLWBB73	203957 04/26/99	pCMVSport 3.0	256	1716	1	1716	122	122	760	1	32	33	50
247	HLWCN37	203957 04/26/99	pCMVSport 3.0	257	788	1	788	81	81	761	1	40	41	43
248	HLWDB73	203957 04/26/99	pCMVSport 3.0	258	1611	1	1611	95	95	762	1	27	28	35
249	HLYDF73	203957 04/26/99	pSport1	259	626	1	626		363	763	1	11	12	23
250	HLYEU59	203957 04/26/99	pSport1	260	1146	1	1146	258	258	764	1	24	25	43
251	HLYGB19	203959 04/26/99	pSport1	261	2967	1527	2966	1863	1863	765	1			14

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
252	HLYGE16	203957 04/26/99	pSport1	262	752	1	752	406	406	766	1	17	18	73
253	HLYGY91	203957 04/26/99	pSport1	263	640	1	640	211	211	767	1	20	21	42
254	HMCAZ04	203917 04/08/99	Uni-ZAP XR	264	1733	405	1670	106	106	768	1	25	26	450
255	HMCAZ04	203917 04/08/99	Uni-ZAP XR	265	1733	405	1670	497	497	769	1	20	21	35
256	HMCAZ04	203917 04/08/99	Uni-ZAP XR	266	1733	406	1670	106	106	770	1	25	26	450
257	HMCAZ04	203917 04/08/99	Uni-ZAP XR	267	1735	407	1671	498	498	771	1	20	21	35
258	HMCAZ04	203917 04/08/99	Uni-ZAP XR	268	1301	1	1301	97	97	772	1	20	21	35
259	HMCFH60	203957 04/26/99	Uni-ZAP XR	269	443	1	443	211	211	773	1	17	18	48
260	HMDAB29	203957 04/26/99	Uni-ZAP XR	270	1190	1	1190	97	97	774	1	17	18	26
261	HMDAD44	203957 04/26/99	Uni-ZAP XR	271	1204	1	1204	135	135	775	1			8
262	HMEBB82	203957 04/26/99	Lambda ZAP II	272	2641	1	2641	30	30	776	1	19	20	34

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
263	HMEDE24	203957 04/26/99	Lambda ZAP II	273	2836	884	2806	900	900	777	1	16	17	33
264	HMEDI90	203957 04/26/99	Lambda ZAP II	274	2276	362	2219		622	778	1	12	13	17
265	HMELM75	203957 04/26/99	Lambda ZAP II	275	1607	1	1607	113	113	779	1	18	19	93
266	HMIAK10	203957 04/26/99	Uni-ZAP XR	276	1064	1	1064	195	195	780	1	22	23	31
267	HMIBF07	203957 04/26/99	Uni-ZAP XR	277	1738	1	1738	229	229	781	1			6
268	HMICI80	203957 04/26/99	Uni-ZAP XR	278	1772	1	1772		1149	782	1	10	11	32
269	HMICP65	203979 04/29/99	Uni-ZAP XR	279	2048	1	2048	249	249	783	1	16	17	30
270	HMJAK70	203957 04/26/99	pSport1	280	799	1	799	273	273	784	1			10
271	HMSBE04	203957 04/26/99	Uni-ZAP XR	281	1396	1	1396	295	295	785	1			27
272	HMSCL38	203957 04/26/99	Uni-ZAP XR	282	2945	1	2945	120	120	786	1	25	26	35
273	HMSCR69	203959 04/26/99	Uni-ZAP XR	283	1667	442	1667	107	107	787	1	1	2	381

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
274	HMSHC86	203957 04/26/99	Uni-ZAP XR	284	1724	1	1724	37	37	788	1	20	21	93
275	HMSHU20	203979 04/29/99	Uni-ZAP XR	285	2249	1	2249	50	50	789	1	24	25	113
276	HMSHY25	PTA-793 09/27/99	Uni-ZAP XR	286	2205	1	2205		656	790	1	11	12	35
277	HMTAB77	203979 04/29/99	pCMVSport 3.0	287	3839	1	3839	769	769	791	1	24	25	48
278	HMUAE26	203957 04/26/99	pCMVSport 3.0	288	2000	660	2000	710	710	792	1	20	21	30
279	HMUAN45	203918 04/08/99	pCMVSport 3.0	289	2709	1	2709	239	239	793	1	25	26	227
280	HMVBC31	203957 04/26/99	pSport1	290	2556	1327	2546	1437	1437	794	1	32	33	40
281	HMVDU15	203979 04/29/99	pSport1	291	1351	1	1351	274	274	795	1	21	22	25
282	HMWBL03	203957 04/26/99	Uni-ZAP XR	292	2596	80	2596	137	137	796	1	1	2	397
283	HMWJF53	203957 04/26/99	Uni-ZAP XR	293	2288	927	2101	1015	1015	797	1	30	31	38
284	HNEAK81	203957 04/26/99	Uni-ZAP XR	294	1224	1	1224	288	288	798	1	21	22	23

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
285	HNECL22	203957 04/26/99	Uni-ZAP XR	295	2710	225	2710	472	472	799	1	23	24	34
286	HNECW49	203957 04/26/99	Uni-ZAP XR	296	489	1	463	316	316	800	1	20	21	58
287	HNEDH88	203957 04/26/99	Uni-ZAP XR	297	2073	1	2073	70	70	801	1	19	20	33
288	HNFAC50	203957 04/26/99	Uni-ZAP XR	298	1442	428	1442	676	676	802	1	22	23	32
289	HNFGR08	203957 04/26/99	Uni-ZAP XR	299	1436	1	1436		314	803	1	17	18	43
290	HNFHF34	203957 04/26/99	Uni-ZAP XR	300	728	1	728	178	178	804	1	20	21	30
291	HNGAK51	203957 04/26/99	Uni-ZAP XR	301	915	1	915	248	248	805	1	23	24	32
292	HNGAM58	203957 04/26/99	Uni-ZAP XR	302	1156	1	1156		68	806	1	27	28	114
293	HNGBH53	203957 04/26/99	Uni-ZAP XR	303	636	1	636		47	807	1	17	18	46
294	HNGDQ38	203957 04/26/99	Uni-ZAP XR	304	1045	1	1045		205	808	1	22	23	59
295	HNGDX18	PTA-181 06/07/99	Uni-ZAP XR	305	1425	1	1425	237	237	809	1	30	31	243

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
295	HNGDX18	PTA-181 06/07/99	Uni-ZAP XR	513	1411	1	1411	231	231	1017	1	18	19	132
296	HNGDY34	203957 04/26/99	Uni-ZAP XR	306	1002	1	1002		73	810	1			17
297	HNGEA34	203957 04/26/99	Uni-ZAP XR	307	1103	1	1103		58	811	1	24	25	44
298	HNGEQ75	203957 04/26/99	Uni-ZAP XR	308	1029	1	1029		30	812	1	21	22	22
299	HNGGA68	203957 04/26/99	Uni-ZAP XR	309	585	1	585	184	184	813	1			32
300	HNGGP65	203957 04/26/99	Uni-ZAP XR	310	541	1	541	181	181	814	1	15	16	68
301	HNGHZ69	PTA-795 09/27/99	Uni-ZAP XR	311	1195	1	1195		25	815	1			9
302	HNGIV64	203957 04/26/99	Uni-ZAP XR	312	1047	1	1047		221	816	1			8
303	HNGJB41	PTA-181 06/07/99	Uni-ZAP XR	313	1246	1	1246	252	252	817	1	46	47	73
304	HNGKT41	203959 04/26/99	Uni-ZAP XR	314	1048	1	1048	415	415	818	1	17	18	45

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
305	HNGMW45	203959 04/26/99	Uni-ZAP XR	315	1530	1	1530	452	452	819	1	26	27	43
306	HNGNK44	203959 04/26/99	Uni-ZAP XR	316	1178	302	1178	611	611	820	1	18	19	74
307	HNGNO53	203959 04/26/99	Uni-ZAP XR	317	825	1	825	467	467	821	1	15	16	34
308	HNGPJ25	203959 04/26/99	Uni-ZAP XR	318	853	129	853	544	544	822	1	20	21	25
309	HNHEN82	203918 04/08/99	Uni-ZAP XR	319	573	1	573		78	823	1	13	14	17
310	HNHFE71	203959 04/26/99	Uni-ZAP XR	320	903	1	903	598	598	824	1			21
311	HNHGK22	203918 04/08/99	Uni-ZAP XR	321	909	1	909	239	239	825	1	26	27	64
312	HNHHB10	203959 04/26/99	Uni-ZAP XR	322	901	1	901	215	215	826	1	28	29	59
313	HNHKS19	203959 04/26/99	Uni-ZAP XR	323	790	1	790	192	192	827	1	26	27	41
314	HNTBT17	PTA-181 06/07/99	pCMVSport 3.0	324	1959	1	1959	91	91	828	1			6
315	HNTMH79	203959 04/26/99	pSport1	325	922	1	922	48	48	829	1	35	36	38

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
316	HOABP31	203959 04/26/99	Uni-ZAP XR	326	927	1	890		148	830	1	19	20	123
317	HOABP31	203959 04/26/99	Uni-ZAP XR	327	929	1	892		148	831	1	19	20	124
318	HOACG07	203959 04/26/99	Uni-ZAP XR	328	1298	772	1249	778	778	832	1	21	22	123
319	HODAG07	203918 04/08/99	Uni-ZAP XR	329	900	1	900	43	43	833	1	35	36	43
320	HODBB70	203918 04/08/99	Uni-ZAP XR	330	604	1	604		173	834	1	7	8	27
321	HODBV05	203917 04/08/99	Uni-ZAP XR	331	1119	1	1117	101	101	835	1	17	18	33
322	HODCZ32	203959 04/26/99	Uni-ZAP XR	332	927	1	927		248	836	1			10
323	HOEBK60	203959 04/26/99	Uni-ZAP XR	333	2218	1449	2216	1714	1714	837	1	39	40	43
324	HOFAA78	203959 04/26/99	pSport1	334	1356	1	1356		48	838	1	25	26	71
325	HOFNB74	203959 04/26/99	pCMVSport 2.0	335	1036	1	1036	138	138	839	1	24	25	39
326	HOFNU55	PTA-795 09/27/99	pCMVSport 2.0	336	1365	1	1349	230	230	840	1	28	29	51

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
327	HOGBF01	203918 04/08/99	pCMVSport 2.0	337	1478	1	1478	309	309	841	1	10	11	20
328	HORBS82	203959 04/26/99	Uni-ZAP XR	338	1125	1	1125		21	842	1	19	20	39
329	HORBV76	203959 04/26/99	Uni-ZAP XR	339	1157	1	1157	183	183	843	1	25	26	198
330	HOSDO75	PTA-181 06/07/99	Uni-ZAP XR	340	902	1	902	88	88	844	1			28
331	HOSEC25	203959 04/26/99	Uni-ZAP XR	341	1552	1	1552	17	17	845	1	18	19	24
332	HOSEI81	203918 04/08/99	Uni-ZAP XR	342	897	1	897	203	203	846	1	22	23	83
333	HOSEJ94	203979 04/29/99	Uni-ZAP XR	343	1767	622	1750	848	848	847	1	21	22	28
334	HOUCA21	203918 04/08/99	Uni-ZAP XR	344	1129	1	1129	200	200	848	1	27	28	33
335	HOUDE92	203918 04/08/99	Uni-ZAP XR	345	1284	1	1282		70	849	1	6	7	88
336	HOUDR07	203959 04/26/99	Uni-ZAP XR	346	1911	1	1911	170	170	850	1	27	28	65

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
337	HOUED72	PTA-181 06/07/99	Uni-ZAP XR	347	833	76	799		144	851	1			11
338	HOUFS04	203959 04/26/99	Uni-ZAP XR	348	2927	457	2882	520	520	852	1	42	43	72
339	HOUHI25	PTA-793 09/27/99	Uni-ZAP XR	349	1249	45	1102	188	188	853	1			20
340	HOVBD85	203918 04/08/99	pSport1	350	1129	1	1129	252	252	854	1	19	20	26
341	HPCAB41	203918 04/08/99	Uni-ZAP XR	351	2587	1	2587	184	184	855	1			25
342	HPCAL26	203917 04/08/99	Uni-ZAP XR	352	3097	803	3097	1021	1021	856	1	23	24	30
343	HPEAD23	203959 04/26/99	Uni-ZAP XR	353	582	1	582	188	188	857	1	13	14	93
344	HPFBA54	203959 04/26/99	Uni-ZAP XR	354	835	1	835	258	258	858	1	39	40	45
345	HPFCI36	PTA-181 06/07/99	Uni-ZAP XR	355	879	1	879	94	94	859	1	17	18	19
346	HPFDI37	PTA-181 06/07/99	Uni-ZAP XR	356	352	1	352	38	38	860	1			17

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
347	HPIAA80	203959 04/26/99	Uni-ZAP XR	357	919	312	919		314	861	1	13	14	37
348	HPJBJ51	203959 04/26/99	Uni-ZAP XR	358	2793	522	2421	715	715	862	1	14	15	69
349	HPJBJ51	203959 04/26/99	Uni-ZAP XR	359	2795	523	2422	716	716	863	1	14	15	69
350	HPJBU43	PTA-181 06/07/99	Uni-ZAP XR	360	575	1	575		242	864	1			17
351	HPJCW58	203918 04/08/99	Uni-ZAP XR	361	1165	1	1165	177	177	865	1	19	20	28
352	HPMBX22	203959 04/26/99	Uni-ZAP XR	362	454	1	454		211	866	1			19
353	HPMCJ84	203918 04/08/99	Uni-ZAP XR	363	788	1	788	83	83	867	1	22	23	38
354	HPMCV30	203918 04/08/99	Uni-ZAP XR	364	908	1	908	52	52	868	1	27	28	47
355	HPMFH77	203918 04/08/99	Uni-ZAP XR	365	1891	1	1891		251	869	1	11	12	35
356	HPQAX38	203979 04/29/99	Lambda ZAP II	366	1157	41	1157		295	870	1	10	11	16
357	HPQAX38	203979 04/29/99	Lambda ZAP II	367	1158	41	1158		295	871	1	10	11	16

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
358	HPQCB83	203918 04/08/99	Lambda ZAP II	368	2267	1	2267	85	85	872	1	30	31	34
359	HPQCC53	203918 04/08/99	Lambda ZAP II	369	434	1	434	16	16	873	1	33	34	35
360	HPRBH85	203959 04/26/99	Uni-ZAP XR	370	1673	558	1648	684	684	874	1	18	19	134
361	HPRCA64	203959 04/26/99	Uni-ZAP XR	371	2805	1701	2757	1810	1810	875	1	22	23	39
362	HPRCD35	PTA-181 06/07/99	Uni-ZAP XR	372	709	1	689		265	876	1	16	17	35
363	HPTRM02	203959 04/26/99	pBluescript	373	1760	658	1680	885	885	877	1	16	17	80
364	HPWBA29	203918 04/08/99	Uni-ZAP XR	374	325	1	325	194	194	878	1			13
365	HPWDK06	203959 04/26/99	Uni-ZAP XR	375	878	240	854	405	405	879	1			26
366	HRAAD30	PTA-181 06/07/99	pCMVSport 3.0	376	1496	1	1496		220	880	1	19	20	25
367	HRADA42	203959 04/26/99	pCMVSport 3.0	377	1135	1	1135		122	881	1	24	25	44

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
368	HRADF49	PTA-181 06/07/99	pCMVSport 3.0	378	2704	1	2684	169	169	882	1	39	40	253
369	HRADN25	203959 04/26/99	pCMVSport 3.0	379	1225	17	1206	198	198	883	1	17	18	65
370	HRADT25	203959 04/26/99	pCMVSport 3.0	380	1324	1	1324	233	233	884	1	28	29	63
371	HRDAI17	203918 04/08/99	Uni-ZAP XR	381	1500	547	1500	578	578	885	1	27	28	31
372	HRDDQ39	203959 04/26/99	Uni-ZAP XR	382	776	1	773		215	886	1	17	18	46
373	HRDER22	203959 04/26/99	Uni-ZAP XR	383	543	1	543		32	887	1			9
374	HRDEX93	203959 04/26/99	Uni-ZAP XR	384	1681	711	1638	649	649	888	1	20	21	72
375	HRDFK37	203959 04/26/99	Uni-ZAP XR	385	728	1	726	120	120	889	1			10
376	HRGBD54	203959 04/26/99	Uni-ZAP XR	386	2301	1687	2271		1958	890	1			10
377	HROEA08	PTA-181 06/07/99	Uni-ZAP XR	387	281	1	281	50	50	891	1	25	26	33

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
378	HSAVA08	203918 04/08/99	Uni-ZAP XR	388	1061	1	1061		66	892	1	17	18	26
379	HSAVW42	203959 04/26/99	Uni-ZAP XR	389	595	1	595	129	129	893	1	16	17	22
380	HSAWN53	203959 04/26/99	Uni-ZAP XR	390	349	1	349		159	894	1	29	30	63
381	HSAWZ40	203959 04/26/99	Uni-ZAP XR	391	1019	1	1019	124	124	895	1			37
382	HSAYC41	203959 04/26/99	Uni-ZAP XR	392	214	1	214	106	106	896	1	16	17	36
383	HSDZM54	203959 04/26/99	pBluescript	393	554	1	554	445	445	897	1	15	16	36
384	HSHBF76	203959 04/26/99	Uni-ZAP XR	394	1273	1	1213		129	898	1	7	8	10
385	HSIFG47	203959 04/26/99	Uni-ZAP XR	395	882	1	882	304	304	899	1			13
386	HSJBY32	203918 04/08/99	Uni-ZAP XR	396	1648	1	1648	257	257	900	1	19	20	91
387	HSKDR27	203918 04/08/99	Uni-ZAP XR	397	762	1	762		473	901	1	11	12	27
388	HSLHG78	203979 04/29/99	Uni-ZAP XR	398	1474	452	1474	647	647	902	1	20	21	70

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
389	HSLHX15	203959 04/26/99	Uni-ZAP XR	399	655	1	655	485	485	903	1	20	21	41
390	HSNAP85	203959 04/26/99	Uni-ZAP XR	400	1286	735	1286		941	904	1			4
391	HSNAZ09	203918 04/08/99	Uni-ZAP XR	401	626	1	626		164	905	1			14
392	HSNBM34	203959 04/26/99	Uni-ZAP XR	402	2186	1391	1765		1508	906	1	14	15	62
393	HSOAH16	203959 04/26/99	Uni-ZAP XR	403	721	1	721		206	907	1	11	12	42
394	HSQBF66	203918 04/08/99	Uni-ZAP XR	404	1024	1	1024		229	908	1	28	29	66
395	HSQDO85	PTA-181 06/07/99	Uni-ZAP XR	405	1210	1	1210	133	133	909	1			11
396	HSQES57	203959 04/26/99	Uni-ZAP XR	406	1445	1012	1428	195	195	910	1	14	15	265
397	HSRBE06	PTA-791 09/27/99	Uni-ZAP XR	407	1633	13	1633		128	911	1			21
398	HSSDI26	203918 04/08/99	Uni-ZAP XR	408	1406	1	1406	253	253	912	1			21

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
399	HSSEA64	PTA-181 06/07/99	Uni-ZAP XR	409	1282	1	1274	58	58	913	1	16	17	62
400	HSSEF77	203959 04/26/99	Uni-ZAP XR	410	1053	1	1053		184	914	1	25	26	60
401	HSSFE38	203959 04/26/99	Uni-ZAP XR	411	1238	85	1133		264	915	1	19	20	125
402	HSSGJ58	203918 04/08/99	Uni-ZAP XR	412	1954	1	1954	245	245	916	1	17	18	38
403	HSWBE76	203959 04/26/99	pCMVSport 3.0	413	874	250	710	380	380	917	1	34	35	59
404	HSXCP38	PTA-795 09/27/99	Uni-ZAP XR	414	2206	1	2206		211	918	1			14
405	HSYBI06	203918 04/08/99	pCMVSport 3.0	415	956	1	956	232	232	919	1	21	22	33
406	HT1SC27	203959 04/26/99	Uni-ZAP XR	416	1198	1	1198	366	366	920	1	19	20	27
407	HT3BF49	203959 04/26/99	Uni-ZAP XR	417	2174	1	2174		306	921	1			4
408	HT4FV41	PTA-181 06/07/99	Uni-ZAP XR	418	1764	1	1764		39	922	1	16	17	137

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
409	HT5FX79	203959 04/26/99	Uni-ZAP XR	419	682	59	682		228	923	1	17	18	50
410	HT5GR59	203959 04/26/99	Uni-ZAP XR	420	1743	1	1743	135	135	924	1	23	24	31
411	HTAEI78	203918 04/08/99	Uni-ZAP XR	421	1623	1	1623	632	632	925	1			4
412	HTDAA78	203918 04/08/99	pSport1	422	825	1	825	151	151	926	1			20
413	HTEAG62	203959 04/26/99	Uni-ZAP XR	423	2221	57	2221	1017	1017	927	1	20	21	22
414	HTECB02	203959 04/26/99	Uni-ZAP XR	424	1662	106	1662	196	196	928	1	22	23	56
415	HTECC15	PTA-181 06/07/99	Uni-ZAP XR	425	2055	1	2055	211	211	929	1	19	20	23
416	HTEDF18	203959 04/26/99	Uni-ZAP XR	426	829	1	829	325	325	930	1			5
417	HTEDJ28	203959 04/26/99	Uni-ZAP XR	427	1247	1	1247		287	931	1	18	19	45
418	HTEDS12	203918 04/08/99	Uni-ZAP XR	428	1587	1	1587	260	260	932	1	24	25	36
419	HTEED26	203959 04/26/99	Uni-ZAP XR	429	2179	1	2179	261	261	933	1	19	20	32

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
420	HTEED26	203959 04/26/99	Uni-ZAP XR	430	2167	1	2159	259	259	934	1	19	20	32
421	HTEEF26	203959 04/26/99	Uni-ZAP XR	431	1015	45	984	262	262	935	1			7
422	HTEEF26	203959 04/26/99	Uni-ZAP XR	432	1273	45	984	262	262	936	1			7
423	HTEEW69	203959 04/26/99	Uni-ZAP XR	433	1282	110	1263	182	182	937	1	30	31	323
424	HTEGS07	203959 04/26/99	Uni-ZAP XR	434	806	1	806		493	938	1	20	21	37
425	HTEGS11	PTA-181 06/07/99	Uni-ZAP XR	435	981	1	981		173	939	1			7
426	HTEHA56	203959 04/26/99	Uni-ZAP XR	436	1402	529	1400		280	940	1	5	6	88
427	HTEHU59	203959 04/26/99	Uni-ZAP XR	437	1523	1	1504	170	170	941	1	19	20	34
428	HTEJD29	203959 04/26/99	Uni-ZAP XR	438	1324	1	1324	101	101	942	1			23
429	HTEKM46	PTA-181 06/07/99	Uni-ZAP XR	439	2116	1	2116	171	171	943	1	24	25	38

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
430	HTEMQ17	203959 04/26/99	Uni-ZAP XR	440	1768	1	1768	446	446	944	1			12
431	HTENR63	PTA-792 09/27/99	Uni-ZAP XR	441	1591	1	1591	132	132	945	1	20	21	56
432	HTGGM44	203959 04/26/99	Uni-ZAP XR	442	3016	1	2761	179	179	946	1	18	19	84
433	HTHBZ06	203959 04/26/99	Uni-ZAP XR	443	623	193	619	318	318	947	1			1
434	HTLAP64	203918 04/08/99	Uni-ZAP XR	444	1092	1	1092	173	173	948	1	19	20	20
435	HTLBT80	203959 04/26/99	Uni-ZAP XR	445	2101	817	1881	912	912	949	1	27	28	129
436	HTLDA84	203918 04/08/99	Uni-ZAP XR	446	1444	1	1444		225	950	1			13
437	HTLDN29	203959 04/26/99	Uni-ZAP XR	447	1374	1	1348	175	175	951	1	23	24	33
438	HTLDU78	203918 04/08/99	Uni-ZAP XR	448	1318	1	1318	219	219	952	1			8
439	HTLEC82	203959 04/26/99	Uni-ZAP XR	449	1260	217	1119	530	530	953	1	34	35	36
440	HTLEM16	203959 04/26/99	Uni-ZAP XR	450	1915	1158	1755	1220	1220	954	1	27	28	69

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
441	HTLEV48	203918 04/08/99	Uni-ZAP XR	451	1070	1	1070	205	205	955	1	30	31	207
441	HTLEV48	203918 04/08/99	Uni-ZAP XR	514	1065	1	1065	91	91	1018	1			9
442	HTLFA13	203918 04/08/99	Uni-ZAP XR	452	1160	1	1160		209	956	1	8	9	31
443	HTLFI73	203979 04/29/99	Uni-ZAP XR	453	1159	1	1159	340	340	957	1			23
444	HTLGI89	203959 04/26/99	Uni-ZAP XR	454	2377	1205	2377	1802	1802	958	1	16	17	37
445	HTLIF11	203959 04/26/99	Uni-ZAP XR	455	1968	860	1968	933	933	959	1	33	34	38
446	HTLIF12	203959 04/26/99	Uni-ZAP XR	456	1100	140	1100	642	642	960	1	19	20	75
447	HTLIF12	203959 04/26/99	Uni-ZAP XR	457	1081	142	1033	644	644	961	1	19	20	75
448	HTLIF12	203959 04/26/99	Uni-ZAP XR	458	1044	142	1033	644	644	962	1	19	20	75
449	HTLIF12	203959 04/26/99	Uni-ZAP XR	459	1081	142	1033	644	644	963	1	19	20	75
450	HTLIF12	203959 04/26/99	Uni-ZAP XR	460	1081	142	1033	644	644	964	1	19	20	75

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
451	HTLIF12	203959 04/26/99	Uni-ZAP XR	461	1081	142	1033	644	644	965	1	19	20	75
452	HTNAM63	203918 04/08/99	pBluescript SK-	462	1006	1	1006		193	966	1	15	16	30
453	HTNBK13	203959 04/26/99	pBluescript SK-	463	1160	295	1148	534	534	967	1	16	17	21
454	HTOAI50	203959 04/26/99	Uni-ZAP XR	464	1258	1	1258	61	61	968	1	17	18	27
455	HTOAM11	203918 04/08/99	Uni-ZAP XR	465	1200	1	1200	89	89	969	1	24	25	34
456	HTODH57	203918 04/08/99	Uni-ZAP XR	466	1652	1	1652		228	970	1	18	19	71
457	HTODH83	203918 04/08/99	Uni-ZAP XR	467	1981	1	1981	103	103	971	1	21	22	32
458	HTOEV16	PTA-181 06/07/99	Uni-ZAP XR	468	1640	1	1640	201	201	972	1	39	40	118
459	HTOGR38	203959 04/26/99	Uni-ZAP XR	469	776	138	776		314	973	1	23	24	42
460	HTOHO21	203918 04/08/99	Uni-ZAP XR	470	727	1	727		439	974	1	5	6	63

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
461	HTOHQ05	PTA-181 06/07/99	Uni-ZAP XR	471	1860	1	1860	198	198	975	1	19	20	54
462	HTOJL95	203959 04/26/99	Uni-ZAP XR	472	1854	1	1818	134	134	976	1	26	27	58
463	HTOJL95	203959 04/26/99	Uni-ZAP XR	473	1947	1	1947	221	221	977	1	26	27	58
464	HTPDU17	203959 04/26/99	Uni-ZAP XR	474	2078	1	2078		52	978	1	17	18	33
465	HTSFJ32	203918 04/08/99	pBluescript	475	1257	517	1257	93	93	979	1			18
466	HTTCB60	PTA-181 06/07/99	Uni-ZAP XR	476	1504	1	1504	84	84	980	1	17	18	266
467	HTTEE41	203959 04/26/99	Uni-ZAP XR	477	1973	864	1968		1171	981	1			8
468	HTTEZ02	203918 04/08/99	Uni-ZAP XR	478	1880	1	1880	250	250	982	1	21	22	28
469	HTWEH94	203918 04/08/99	pSport1	479	1361	1	1361	66	66	983	1	43	44	81
470	HTXBD09	203959 04/26/99	Uni-ZAP XR	480	1921	22	1900		350	984	1			12

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
471	HTXDB22	PTA-181 06/07/99	Uni-ZAP XR	481	1211	1	1135		229	985	1	10	11	22
472	HTXDC38	203959 04/26/99	Uni-ZAP XR	482	820	106	806	359	359	986	1			18
473	HTXDC77	203979 04/29/99	Uni-ZAP XR	483	1441	159	1400	65	65	987	1	18	19	151
474	HTXDD61	PTA-181 06/07/99	Uni-ZAP XR	484	1140	1	1140		49	988	1	17	18	132
475	HTXDG92	203959 04/26/99	Uni-ZAP XR	485	1162	1	1162		216	989	1	24	25	66
476	HTXET11	203918 04/08/99	Uni-ZAP XR	486	989	1	989	178	178	990	1	22	23	29
477	HTXFA72	PTA-181 06/07/99	Uni-ZAP XR	487	1861	1	1861	192	192	991	1	17	18	29
478	HTXJY08	203959 04/26/99	Uni-ZAP XR	488	1187	12	1187	108	108	992	1			16
479	HTXKF95	203959 04/26/99	Uni-ZAP XR	489	884	79	875	330	330	993	1	28	29	78
480	HTXMZ07	203959 04/26/99	Uni-ZAP XR	490	1652	189	1640	319	319	994	1	22	23	37

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
481	HUFCL31	203959 04/26/99	pSport1	491	1460	1	1460		287	995	1			26
482	HUKBT67	203959 04/26/99	Lambda ZAP II	492	2069	74	2052		273	996	1	21	22	39
483	HUKDF20	203918 04/08/99	Lambda ZAP II	493	1105	1	1105	214	214	997	1	20	21	33
484	HUKDY82	203918 04/08/99	Lambda ZAP II	494	1435	1	1435	187	187	998	1	17	18	32
485	HUSCJ14	PTA-1838 05/09/00	Lambda ZAP II	495	3342	1	3342	74	74	999	1	30	31	196
486	HUSGL67	203918 04/08/99	pSport1	496	1008	65	1008	350	350	1000	1	21	22	47
487	HUSGU40	203959 04/26/99	pSport1	497	1054	1	1054		500	1001	1	20	21	46
488	HUSIR18	203959 04/26/99	pSport1	498	876	1	876	83	83	1002	1	16	17	22
489	HUVDJ48	203918 04/08/99	Uni-ZAP XR	499	1827	1	1827	196	196	1003	1			5
490	HWAAI12	203959 04/26/99	pCMVSport 3.0	500	3303	1	1838	223	223	1004	1			29
491	HWBBQ70	203959 04/26/99	pCMVSport 3.0	501	1948	1	1948	222	222	1005	1	21	22	43

Gene No.	cDNA Clone ID	ATCC Deposit No:Z and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
492	HWBCN36	203959 04/26/99	pCMVSport 3.0	502	1008	1	1008	378	378	1006	1	23	24	90
493	HWBDJ08	203959 04/26/99	pCMVSport 3.0	503	2085	1	2085	253	253	1007	1	29	30	50
494	HWBFX16	203959 04/26/99	pCMVSport 3.0	504	1497	1	1497		267	1008	1			3
495	HWDAC26	203959 04/26/99	pCMVSport 3.0	505	1958	1	1958	242	242	1009	1	25	26	35
496	HWDAG96	203959 04/26/99	pCMVSport 3.0	506	1147	300	1147	866	866	1010	1	18	19	32
497	HWDAJ01	203959 04/26/99	pCMVSport 3.0	507	781	1	781	288	288	1011	1			24
498	HWHPB78	203959 04/26/99	pCMVSport 3.0	508	1346	1	1346	200	200	1012	1	23	24	66
499	HYABC84	203959 04/26/99	pCMVSport 3.0	509	1338	768	1238	1015	1015	1013	1	28	29	62
500	HYABC84	203959 04/26/99	pCMVSport 3.0	510	1478	833	1306	1080	1080	1014	1	28	29	62

TABLE 1B

Gene No:	Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table 4 for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
1	H6BSF56	762968	11	83 - 508	515	Asn-131 to Met-140.	AR089: 53, AR060: 29 L0599: 4, L0439: 3, L0777: 3, H0253: 2, H0520: 2, L0754: 2, L0745: 2, L0759: 2, H0556: 1, H0657: 1, S0116: 1, H0450: 1, S0418: 1, S0046: 1, S0222: 1, H0492: 1, S0049: 1, H0123: 1, H0050: 1, H0051: 1, H0615: 1, S0036: 1, H0494: 1, L0805: 1, L0776: 1, S0126: 1, H0435: 1, H0670: 1, S0028: 1, L0747: 1, S0026: 1 and H0542: 1.		
2	H6EDM64	841331	12	1448 - 1468	516		AR060: 22, AR089: 16 H0333: 6, H0556: 5, H0255: 5, H0547: 5, H0618: 4, H0581: 4, H0553: 4, H0135: 4, L0783: 4, S0358: 3, S0222: 3, H0318: 3, H0052: 3, H0617: 3, L0769: 3, H0521: 3, H0555: 3, H0436: 3, H0423: 3, H0341: 2, H0402: 2, H0619: 2, H0549: 2, H0592: 2, H0253: 2, S0474: 2, H0620: 2, H0181: 2, H0059: 2, H0561: 2, L0761: 2, L0764: 2, L0809: 2, H0520: 2, H0682: 2, S0330: 2, H0522: 2,		

							L0751: 2, L0747: 2, L0750: 2, L0755: 2, L0596: 2, L0601: 2, H0624: 1, H0686: 1, H0295: 1, T0049: 1, H0657: 1, H0656: 1, H0484: 1, H0483: 1, S0356: 1, S0442: 1, S0354: 1, S0360: 1, S0045: 1, S0300: 1, L0717: 1, S0220: 1, H0370: 1, H0455: 1, H0586: 1, H0587: 1, H0559: 1, L0623: 1, H0486: 1, T0082: 1, H0183: 1, H0205: 1, H0327: 1, H0050: 1, H0687: 1, H0615: 1, T0006: 1, H0424: 1, H0213: 1, H0606: 1, H0166: 1, S0366: 1, H0090: 1, H0087: 1, H0551: 1, H0264: 1, H0488: 1, H0413: 1, H0100: 1, H0494: 1, H0625: 1, H0130: 1, H0633: 1, H0647: 1, S0426: 1, H0529: 1, L0371: 1, L0796: 1, L0637: 1, L0648: 1, L0364: 1, L0649: 1, L0774: 1, L0375: 1, L0378: 1, L0654: 1, L0659: 1, L0636: 1, L0663: 1, H0702: 1, H0693: 1, H0593: 1, S0126: 1, H0539: 1, S0152: 1, H0478: 1, S0027: 1, S0028: 1, L0740: 1, L0780: 1, L0758: 1, H0445: 1, S0011: 1, H0136: 1, S0196: 1 and H0352: 1.		
3	H6EEC72	889401	13	263 - 319	517		L0809: 4, L0747: 4, L0794: 3, L0759: 3, S0046: 2, H0497: 2, H0559: 2, H0575:		

							2, H0618: 2, H0050: 2, L0769: 2, L0766: 2, L0663: 2, H0521: 2, L0743: 2, L0748: 2, H0685: 1, H0295: 1, H0650: 1, H0657: 1, H0255: 1, S0418: 1, S0358: 1, S0376: 1, H0580: 1, S0045: 1, H0550: 1, H0610: 1, H0333: 1, H0069: 1, H0635: 1, S0010: 1, H0581: 1, H0546: 1, H0086: 1, H0009: 1, H0081: 1, T0010: 1, H0059: 1, H0100: 1, H0429: 1, H0494: 1, H0633: 1, L0770: 1, L0372: 1, L0800: 1, L0644: 1, L0775: 1, L0806: 1, L0657: 1, L0636: 1, L0787: 1, L0666: 1, L0665: 1, H0519: 1, S0152: 1, H0555: 1, L0749: 1, L0755: 1, L0758: 1, L0592: 1, S0192: 1, H0422: 1 and H0506: 1.		
4	HACAB68	584773	14	135 - 371	518	Leu-6 to Ser-12.	L0748: 4, H0457: 3 and S6022: 1.		
5	HACBJ56	847112	15	250 - 327	519	Arg-14 to Ile-24.	AR251: 7, AR310: 6, AR265: 6, AR053: 6, AR060: 6, AR055: 5, AR312: 5, AR309: 5, AR273: 5, AR061: 5, AR206: 5, AR194: 5, AR186: 5, AR213: 4, AR052: 4, AR089: 4, AR253: 4, AR248: 4, AR205: 4, AR033: 3, AR243: 3, AR096: 3, AR039: 3, AR246: 3, AR104: 3, AR202: 3,		

							AR263: 3, AR204: 2, AR244: 1, AR249: 1 H0661: 1, S0045: 1, H0550: 1, S0280: 1, S0010: 1, H0028: 1, L0764: 1, L0803: 1, L0665: 1, S0053: 1, H0670: 1, L0748: 1, L0731: 1 and L0581: 1.		
6	HACBS22	847113	16	217 - 342	520	Cys-2 to Leu-8.	H0052: 6, S0002: 5, H0580: 3, S0051: 3, L0766: 3, L0439: 3, L0777: 3, L0361: 3, S0046: 2, H0619: 2, H0550: 2, S0280: 2, H0039: 2, S0142: 2, L0794: 2, L0775: 2, L0748: 2, L0754: 2, L0747: 2, L0758: 2, L0596: 2, H0170: 1, H0265: 1, H0556: 1, S0040: 1, H0661: 1, H0663: 1, S0420: 1, S0356: 1, S0354: 1, H0637: 1, S0222: 1, H0431: 1, H0586: 1, H0492: 1, H0486: 1, H0042: 1, H0253: 1, S0474: 1, H0545: 1, H0014: 1, H0622: 1, T0023: 1, H0033: 1, H0213: 1, H0135: 1, H0038: 1, H0063: 1, S0038: 1, T0042: 1, H0560: 1, H0561: 1, S0372: 1, S0450: 1, S0344: 1, S0426: 1, L0762: 1, L0770: 1, L0769: 1, L0662: 1, L0375: 1, L0665: 1, L0438: 1, S0126: 1, H0689: 1, H0539: 1, H0521: 1, S0174: 1, L0742: 1, L0751: 1, L0749: 1, L0779: 1, L0757: 1, S0031: 1, L0581:		

							1, H0668: 1 and H0506: 1.		
7	HADDE71	839187	17	250 - 666	521	Pro-9 to Thr-14, Ser-37 to Trp-44, Gly-79 to Thr-85, Arg-88 to Lys-139.	AR089: 25, AR060: 15 L0759: 6, L0769: 5, H0052: 4, L0770: 4, L0809: 4, L0439: 4, L0752: 4, S0408: 3, L0751: 3, L0747: 3, L0779: 3, S0007: 2, H0351: 2, H0333: 2, H0427: 2, H0581: 2, L0662: 2, L0649: 2, L0774: 2, L0806: 2, L0666: 2, L0741: 2, L0777: 2, H0543: 2, H0739: 1, H0171: 1, H0254: 1, H0125: 1, H0675: 1, H0722: 1, H0733: 1, S0140: 1, H0261: 1, H0592: 1, H0586: 1, H0587: 1, H0257: 1, H0486: 1, L0022: 1, H0042: 1, H0150: 1, H0086: 1, H0123: 1, T0010: 1, H0266: 1, H0673: 1, S0364: 1, H0063: 1, H0087: 1, H0494: 1, H0560: 1, H0538: 1, L0761: 1, L0772: 1, L0646: 1, L0765: 1, L0766: 1, L0805: 1, L0776: 1, L0807: 1, L0657: 1, L0783: 1, H0547: 1, S0126: 1, H0435: 1, S0330: 1, H0521: 1, H0522: 1, L0743: 1, L0749: 1, L0750: 1, L0786: 1, L0753: 1, L0755: 1, L0731: 1, L0758: 1, S0436: 1, S0011: 1 and S0192: 1.		
8	HADDJ13	827273	18	347 - 439	522		H0427: 1		
9	HADMB15	847116	19	238 - 300	523		AR089: 12, AR060: 7 H0124: 28, H0013: 8, H0547: 4, H0144: 3, L0595:		

							3, H0390: 2, S0346: 2, H0012: 2, L0565: 2, L0777: 2, S0001: 1, S0282: 1, S0442: 1, H0619: 1, S0222: 1, H0333: 1, T0039: 1, S0010: 1, S0049: 1, H0052: 1, H0546: 1, H0178: 1, H0566: 1, H0081: 1, H0024: 1, S0388: 1, S0051: 1, H0292: 1, H0135: 1, H0591: 1, H0087: 1, H0551: 1, S0038: 1, H0100: 1, L0770: 1, L0521: 1, L0651: 1, L0543: 1, L0664: 1, H0520: 1, S3012: 1, S0028: 1, L0439: 1, L0759: 1, H0445: 1, L0592: 1, L0599: 1 and H0352: 1.		
10	HAGBQ12	722205	20	171 - 236	524		AR060: 7, AR089: 4 L0754: 4, L0777: 2, L0755: 2, S0010: 1, H0049: 1, L0163: 1, L0771: 1, L0775: 1 and L0776: 1.		
11	HAGDW20	637489	21	238 - 291	525		AR089: 16, AR060: 11 S0010: 1 and H0616: 1.		
12	HAGEG10	823543	22	146 - 313	526		AR089: 8, AR060: 6 L0766: 13, L0663: 5, L0439: 3, L0747: 3, L0750: 3, H0580: 2, H0486: 2, H0013: 2, S0250: 2, L0662: 2, L0768: 2, L0527: 2, L0647: 2, L0792: 2, L0779: 2, L0596: 2, L0592: 2, L0362: 2, H0543: 2, H0556: 1, S0114: 1, H0661: 1, H0402: 1, S0420: 1, H0676: 1, H0438: 1, H0600: 1, H0497: 1, S0010: 1, L0471:		

							1, H0083: 1, H0267: 1, H0316: 1, H0090: 1, H0591: 1, H0038: 1, H0040: 1, L0060: 1, L0667: 1, L0373: 1, L0803: 1, L0650: 1, L0774: 1, L0775: 1, L0555: 1, L0659: 1, L0526: 1, L0529: 1, L0791: 1, L0666: 1, L0664: 1, L0665: 1, H0520: 1, H0547: 1, H0684: 1, H0521: 1, H0436: 1, H0540: 1, L0740: 1, L0756: 1, L0755: 1, L0758: 1, H0445: 1, H0542: 1 and H0423: 1.		
13	HAGEQ79	828055	23	515 - 550	527		AR089: 15, AR060: 14 H0585: 12, L0439: 8, H0052: 7, H0251: 7, L0805: 7, L0776: 6, S0010: 5, L0803: 5, L0745: 5, L0809: 4, L0438: 4, L0779: 4, L0747: 3, S0222: 2, H0438: 2, T0010: 2, S6028: 2, L0455: 2, L0794: 2, L0790: 2, S0028: 2, L0742: 2, L0753: 2, S0436: 2, L0592: 2, H0650: 1, S0001: 1, S0420: 1, S0408: 1, H0013: 1, H0156: 1, T0082: 1, S0049: 1, H0263: 1, H0178: 1, H0050: 1, H0051: 1, S0051: 1, H0375: 1, H0598: 1, S0036: 1, H0038: 1, H0040: 1, S0386: 1, S0039: 1, L0351: 1, L0370: 1, L0770: 1, L0766: 1, L0774: 1, L0783: 1, L0788: 1, L0791: 1, L0665: 1, L0352:		

							1, S0380: 1, L0740: 1, L0777: 1, L0755: 1 and L0759: 1.		
14	HAGFS57	847120	24	241 - 405	528	Met-1 to Lys-6.	AR060: 5, AR089: 3 L0438: 7, L0439: 6, L0747: 4, L0005: 3, S0360: 3, H0547: 3, S0222: 2, L0105: 2, S0002: 2, S0426: 2, L0794: 2, L0659: 2, L0664: 2, L0754: 2, L0758: 2, H0506: 2, H0170: 1, H0171: 1, H0656: 1, S0212: 1, H0580: 1, H0455: 1, H0069: 1, H0098: 1, S0010: 1, H0581: 1, H0263: 1, H0009: 1, L0471: 1, H0099: 1, S0003: 1, H0039: 1, S0036: 1, H0090: 1, H0591: 1, S0422: 1, L0763: 1, L0638: 1, L0372: 1, L0646: 1, L0773: 1, L0662: 1, L0766: 1, L0649: 1, L0803: 1, L0804: 1, L0651: 1, L0784: 1, L0776: 1, L0647: 1, S0052: 1, H0144: 1, H0682: 1, H0659: 1, H0521: 1, H0555: 1, L0742: 1, L0750: 1, L0756: 1, H0445: 1, S0434: 1 and S0452: 1.		
15	HAGHN57	773286	25	900 - 932	529		AR060: 9, AR089: 7 H0521: 5, L0777: 5, S0376: 4, H0156: 3, H0519: 3, H0436: 3, L0731: 3, H0656: 2, H0580: 2, H0036: 2, L0471: 2, H0090: 2, H0040: 2, H0551: 2, H0494: 2, S0438: 2, H0529: 2, L0809: 2, H0144: 2, S0374: 2,		

							H0593: 2, H0170: 1, H0583: 1, H0650: 1, S0418: 1, S0358: 1, S0045: 1, H0619: 1, H0586: 1, H0643: 1, H0632: 1, H0486: 1, S0280: 1, H0590: 1, S0010: 1, S0346: 1, H0581: 1, H0231: 1, H0046: 1, H0123: 1, S6028: 1, H0687: 1, S0003: 1, S0214: 1, H0252: 1, H0615: 1, H0212: 1, L0455: 1, S0366: 1, H0163: 1, H0038: 1, H0634: 1, T0067: 1, L0475: 1, H0560: 1, H0561: 1, S0464: 1, H0646: 1, S0426: 1, H0026: 1, L0790: 1, H0520: 1, H0435: 1, S0328: 1, H0539: 1, H0704: 1, S0027: 1, L0439: 1, L0750: 1, L0756: 1, L0757: 1, L0581: 1, L0595: 1, H0543: 1 and H0423: 1.		
16	HAHEA15	847013	26	196 - 237	530		AR194: 23, AR205: 21, AR206: 20, AR039: 18, AR246: 17, AR202: 17, AR204: 15, AR244: 14, AR243: 14, AR052: 13, AR265: 13, AR198: 12, AR310: 12, AR271: 12, AR053: 11, AR263: 11, AR033: 10, AR312: 10, AR273: 10, AR251: 10, AR186: 10, AR213: 10, AR089: 10, AR104: 9, AR309: 9, AR060: 9, AR055: 8, AR061: 7, AR249: 6, AR096: 6, AR253: 5, AR248: 3		

							L0766: 3, H0599: 2, L0750: 2, L0753: 2, L0775: 1, L0754: 1, L0755: 1 and L0759: 1.		
17	HAJAA47	534670	27	192 - 308	531	Leu-33 to Asp-38.	H0560: 1, H0561: 1 and H0542: 1.		
18	HAJAY92	845601	28	12 - 296	532	Lys-89 to Glu-94.	AR060: 184, AR089: 98 H0561: 1 and L0758: 1.		
19	HAJBV67	866415	29	605 - 1684	533	Arg-24 to Trp-44, Leu-87 to Ser-93, Arg-119 to Trp-125, Pro-206 to Lys-211, Glu-280 to Trp-286.	AR089: 8, AR248: 7, AR309: 7, AR265: 6, AR249: 6, AR253: 6, AR202: 6, AR312: 6, AR060: 5, AR194: 5, AR243: 4, AR053: 4, AR213: 4, AR052: 4, AR033: 3, AR310: 3, AR039: 3, AR096: 3, AR246: 3, AR205: 3, AR271: 3, AR263: 3, AR251: 3, AR104: 2, AR273: 2, AR204: 2, AR055: 1, AR186: 1, AR061: 1 L0754: 9, S0444: 6, S0442: 5, S0358: 5, H0622: 5, H0624: 4, H0040: 4, L0659: 4, H0144: 4, H0521: 4, H0171: 3, H0046: 3, H0658: 3, H0555: 3, H0436: 3, L0758: 3, S0434: 3, H0543: 3, S0418: 2, S0360: 2, S0222: 2, H0013: 2, H0156: 2, H0575: 2, H0615: 2, H0674: 2, H0616: 2, H0551: 2, H0412: 2, H0623: 2, S0440: 2, H0647: 2, S0422: 2, H0529: 2, L0666: 2, S0374: 2, S0380: 2, S0146:		

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20	HAJCH70	827275	30	284 - 400	534		H0561: 1		
21	HAOAG15	852204	31	8 - 3511	535	Asp-26 to Leu-32, Trp-62 to Asp-72,	AR206: 3, AR263: 3, AR207: 3, AR312: 2,		

						Gln-95 to His-101, Thr-158 to Thr-164, Phe-222 to Glu-227, Asn-234 to Thr-245, Gly-256 to Glu-266, Gly-277 to Glu-283, Arg-310 to Ser-317, Ser-327 to Phe-333, Ser-360 to Ser-366.	AR053: 2, AR254: 2, AR205: 1, AR089: 1, AR033: 1, AR096: 1 L0759: 3, S0314: 2, L0744: 2, L0756: 2, L0755: 2, S0046: 1, H0391: 1, H0052: 1, H0050: 1, S0318: 1, S0338: 1, S0312: 1, L0766: 1 and H0144: 1.		
22	HAQAI92	688037	32	250 - 321	536		AR089: 43, AR060: 31 H0617: 5, H0606: 2, L0744: 2, L0779: 2, H0295: 1, H0100: 1, S0440: 1, H0026: 1, L0762: 1, L0504: 1, L0769: 1, L0764: 1, L0662: 1, L0649: 1, L0804: 1, L0787: 1, L0666: 1, L0663: 1, H0520: 1, L0748: 1, L0751: 1, L0752: 1 and S0436: 1.		
23	HAQCE11	633730	33	262 - 273	537		AR060: 7, AR089: 3 H0295: 5		
24	HATBI94	839468	34	18 - 224	538	Lys-42 to Asp-54.	AR060: 5, AR089: 3 L0758: 9, L0769: 4, H0556: 3, L0756: 3, H0486: 2, H0156: 2, H0040: 2, H0529: 2, L0766: 2, L0803: 2, L0659: 2, L0809: 2, L0565: 2, H0539: 2, L0748: 2, L0754: 2, L0777: 2, H0595: 2, L0595: 2, L0361: 2, S0114: 1, H0402: 1, S0358: 1, H0580: 1, S0222: 1, H0587: 1, H0497: 1, H0013: 1, H0427: 1, H0581: 1, H0251: 1, H0046: 1, H0009: 1, H0320: 1, H0594: 1, H0266: 1, H0031: 1,		

							L0055: 1, H0376: 1, H0634: 1, S0038: 1, H0100: 1, L0667: 1, L0771: 1, L0804: 1, L0776: 1, L0547: 1, L0790: 1, L0791: 1, L0793: 1, L0665: 1, H0144: 1, H0519: 1, S0126: 1, H0682: 1, H0659: 1, H0521: 1, S0404: 1, L0740: 1, L0747: 1, L0759: 1, S0436: 1 and L0591: 1.		
25	HATCB45	631172	35	268 - 396	539		L0749: 3, H0156: 2, H0341: 1 and L0754: 1.		
26	HATCD80	826098	36	296 - 409	540		AR060: 3, AR089: 1 H0156: 1 and H0038: 1.		
27	HATCI03	580805	37	271 - 324	541	Lys-8 to Trp-13.	AR089: 17, AR060: 10 S6026: 1, H0156: 1 and S0426: 1.		
28	HATEH20	836056	38	93 - 221	542	Val-23 to Glu-28.	AR060: 6, AR089: 4 L0439: 11, L0740: 11, H0046: 10, H0556: 8, H0052: 7, L0766: 7, S0222: 6, H0617: 6, S0049: 5, H0620: 5, H0144: 5, L0741: 5, L0747: 5, L0731: 5, S0278: 4, L0163: 4, S0002: 4, L0438: 4, L0742: 4, L0743: 4, L0748: 4, H0657: 3, H0599: 3, H0618: 3, S0010: 3, H0050: 3, S0051: 3, S6028: 3, H0266: 3, H0551: 3, H0494: 3, S0144: 3, H0529: 3, L0804: 3, L0663: 3, S0330: 3, L0751: 3, L0754: 3, L0752: 3, L0759: 3, H0656: 2, H0333: 2, H0486: 2, H0042: 2, H0457: 2, H0041: 2, T0010:		

							2, S0003: 2, T0006: 2, S0364: 2, H0124: 2, S0366: 2, H0135: 2, L0775: 2, L0809: 2, L0789: 2, H0660: 2, L0753: 2, L0757: 2, L0758: 2, L0485: 2, L0599: 2, L0601: 2, H0265: 1, S0040: 1, H0650: 1, H0341: 1, S0212: 1, S0282: 1, H0663: 1, H0638: 1, S0418: 1, S0420: 1, S0360: 1, S0408: 1, L0149: 1, H0208: 1, S0132: 1, H0370: 1, L0623: 1, H0013: 1, H0427: 1, S0280: 1, H0156: 1, H0097: 1, H0575: 1, H0036: 1, H0590: 1, S0346: 1, H0318: 1, H0196: 1, H0596: 1, H0597: 1, H0231: 1, H0009: 1, N0006: 1, L0471: 1, H0012: 1, H0024: 1, H0373: 1, H0051: 1, H0083: 1, H0292: 1, H0428: 1, H0604: 1, H0553: 1, H0181: 1, H0169: 1, H0163: 1, H0090: 1, T0067: 1, H0264: 1, S0038: 1, S0386: 1, S0112: 1, L0564: 1, H0561: 1, S0142: 1, S0344: 1, L0770: 1, L0769: 1, L0637: 1, L0761: 1, L0372: 1, L0374: 1, L0521: 1, L0626: 1, L0533: 1, L0803: 1, L0376: 1, L0806: 1, L0805: 1, L0655: 1, L0783: 1, L0529: 1, L0666: 1, S0374: 1, H0520: 1, H0547: 1, H0519: 1, H0658: 1, S0380:		

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29	HBAGD86	838799	39	521 - 580	543		AR089: 1 L0809: 4, L0766: 3, L0439: 3, H0624: 2, H0411: 2, L0794: 2, L0756: 2, L0731: 2, L0005: 1, H0599: 1, L0471: 1, S0051: 1, T0010: 1, H0266: 1, S0150: 1, L0637: 1, L0765: 1, L0803: 1, L0783: 1, H0144: 1, H0672: 1, S0392: 1, L0748: 1, L0779: 1, L0777: 1 and L0759: 1.		
30	HBCJL35	1300785	40	17 - 391	544		AR089: 8, AR060: 4 H0013: 8, L0805: 5, H0716: 4, S0010: 4, H0052: 4, H0144: 4, H0615: 3, H0547: 3, L0747: 3, H0645: 2, S0049: 2, H0009: 2, L0769: 2, L0776: 2, L0665: 2, H0519: 2, H0658: 2, H0660: 2, L0602: 2, H0555: 2, L0439: 2, L0750: 2, L0597: 2, H0136: 2, H0423: 2, H0624: 1, H0171: 1, H0717: 1, S0402: 1, H0294: 1, S0114: 1, S0116: 1, H0341: 1, S0212: 1, H0483: 1, H0664: 1, S0360: 1, S0046: 1, H0619: 1, H0411: 1, H0369: 1, S0222: 1, H0438: 1, H0486: 1, H0156:		

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		897937	511	1033 - 1407	1015	Pro-46 to Ala-57, Ser-74 to Glu-94, Gly-104 to Ser-110.			
31	HBDAB91	789532	41	351 - 440	545	Lys-21 to Gln-29.	H0551: 2, L0803: 2, L0439: 2, L0750: 2, S0308: 2, L0644: 1, L0655: 1, H0479: 1, L0780: 1 and L0752: 1.		
32	HBDAB91	864374	42	671 - 760	546	Lys-21 to Gln-29.	H0551: 2, L0803: 2, L0439: 2, L0750: 2, S0308: 2, L0644: 1, L0655: 1, H0479: 1, L0780: 1 and L0752: 1.		
33	HBGBC29	691473	43	1016 - 1024	547		AR060: 4, AR089: 3 L0731: 20, L0747: 7, L0794: 6, L0764: 4, L0803: 4, L0759: 4, L0662: 3, L0774: 3, L0749: 3, L0756: 3, S0360: 2, H0156: 2, H0046: 2, H0181: 2, L0766: 2, L0659: 2, L0438: 2, S0126: 2, H0658: 2, L0439: 2, L0754: 2, L0777: 2,		

							L0755: 2, L0757: 2, L0604: 2, S0242: 2, S0376: 1, L0717: 1, H0270: 1, H0597: 1, H0123: 1, H0617: 1, H0551: 1, H0647: 1, L0770: 1, L0769: 1, L0638: 1, L0775: 1, L0651: 1, L0527: 1, L0526: 1, L0809: 1, L0789: 1, L0666: 1, L0665: 1, H0547: 1, H0435: 1, H0648: 1, S0330: 1, H0627: 1, L0750: 1, L0752: 1, L0758: 1, L0366: 1 and H0293: 1.		
34	HBGNC72	892131	44	550 - 780	548	His-49 to His-57.	AR089: 8, AR060: 7 H0617: 5, L0751: 3, L0779: 3, H0618: 2, L0637: 2, L0764: 2, H0543: 2, H0265: 1, H0556: 1, H0585: 1, H0255: 1, H0664: 1, S0442: 1, H0637: 1, S0045: 1, H0485: 1, H0486: 1, H0374: 1, H0052: 1, H0674: 1, H0135: 1, L0770: 1, L0769: 1, L0662: 1, L0794: 1, L0766: 1, L0803: 1, L0805: 1, L0653: 1, L0636: 1, L0783: 1, L0787: 1, L0663: 1, H0520: 1, H0547: 1, H0593: 1, H0521: 1, H0555: 1, H0436: 1, S0028: 1, L0741: 1, L0758: 1, S0276: 1 and H0352: 1.		
35	HBHAA05	603174	45	110 - 286	549		AR089: 34, AR060: 15 S0029: 1		
36	HBHAA81	846465	46	28 - 639	550		AR055: 37, AR033: 9, AR186: 9, AR104: 8, AR202: 7, AR206: 7,		

							AR246: 7, AR204: 7, AR194: 5, AR198: 4, AR244: 4, AR251: 4, AR060: 4, AR061: 4, AR052: 4, AR053: 4, AR205: 4, AR309: 4, AR312: 3, AR273: 3, AR310: 3, AR271: 3, AR213: 3, AR096: 3, AR248: 3, AR039: 2, AR089: 2, AR265: 2 H0599: 5, H0619: 2, S0366: 2, S0282: 1, S0029: 1, H0735: 1, H0200: 1, H0373: 1 and S6028: 1.		
37	HBIAA59	806303	47	1877 - 2287	551	Arg-34 to Ser-39, Pro-45 to Ile-55.	AR089: 13, AR060: 9 L0747: 13, L0757: 12, L0754: 8, L0749: 6, L0740: 5, L0731: 4, H0009: 3, H0051: 3, L0750: 3, L0756: 3, L0777: 3, L0752: 3, S0376: 2, S0360: 2, H0619: 2, H0485: 2, S0010: 2, H0052: 2, H0251: 2, S0022: 2, H0090: 2, H0494: 2, L0662: 2, L0794: 2, L0806: 2, L0776: 2, L0665: 2, H0144: 2, S0390: 2, L0748: 2, L0581: 2, H0265: 1, H0556: 1, H0716: 1, S0402: 1, L0808: 1, S0212: 1, S0001: 1, H0661: 1, S0358: 1, S0444: 1, S0046: 1, S6026: 1, L0717: 1, H0549: 1, S0222: 1, H0438: 1, H0592: 1, H0333: 1, H0632: 1, H0486: 1, H0013: 1, H0042: 1, S0049: 1, H0545:		

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38	HBIAC29	831751	48	1036 - 1125	552		AR089: 26, AR060: 11 L0105: 11, L0745: 5, L0770: 4, L0794: 4, L0777: 4, S0003: 3, L0766: 3, L0806: 3, L0809: 3, L0740: 3, L0751: 3, L0749: 3, S0376: 2, S0360: 2, L0598: 2, L0776: 2, L0666: 2, L0663: 2, S0126: 2, H0659: 2, H0658: 2, S0406: 2, H0436: 2, S3014: 2, L0754: 2, L0756: 2, L0604: 2, H0624: 1, H0265: 1, S0116: 1, H0669: 1, H0331: 1, L0586: 1, S0049: 1, H0597: 1, L0471: 1, H0024: 1, S0214: 1, H0169: 1, L0455:		

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39	HBICW51	553630	49	289 - 417	553		AR060: 7, AR089: 4 L0766: 7, H0556: 6, S0002: 2, H0395: 1, S0418: 1, S0049: 1, H0052: 1, H0598: 1, H0591: 1, H0560: 1, L0803: 1, L0655: 1, H0478: 1, L0749: 1, L0758: 1, S0031: 1, H0444: 1 and H0543: 1.		
40	HBJAB02	837309	50	84 - 188	554	Arg-24 to Asp-31.	L0794: 3, H0255: 2, H0318: 2, H0251: 2, L0764: 2, L0628: 2, L0665: 2, H0658: 2, L0361: 2, H0265: 1, H0685: 1, H0657: 1, H0483: 1, S0420: 1, S0358: 1, S0132: 1, S0222: 1, T0082: 1, H0150: 1, H0083: 1, S0214: 1, H0252: 1, H0628: 1, T0041: 1, S0344: 1, H0529: 1, L0520: 1, L0535: 1, L0662: 1, L0387: 1, L0375: 1, L0518: 1, L0666: 1, L0663: 1, H0519: 1, H0670: 1, H0660: 1, L0747: 1, L0777: 1, L0601: 1, S0276: 1, H0423: 1 and H0422: 1.		

41	HBJAC65	679337	51	137 - 208	555		AR060: 6, AR089: 3 L0743: 20, L0744: 16, L0748: 9, L0747: 8, L0754: 7, H0617: 4, L0750: 4, L0757: 4, H0549: 3, H0014: 3, H0087: 3, L0776: 3, H0624: 2, H0171: 2, S0360: 2, H0013: 2, H0427: 2, H0188: 2, H0031: 2, H0413: 2, S0352: 2, H0646: 2, L0769: 2, L0751: 2, L0755: 2, L0731: 2, L0591: 2, L0603: 2, S0192: 2, H0170: 1, H0661: 1, H0662: 1, S0376: 1, S0045: 1, S0046: 1, H0619: 1, H0411: 1, S6022: 1, S0222: 1, H0392: 1, H0592: 1, H0333: 1, T0039: 1, S0280: 1, H0042: 1, H0618: 1, H0318: 1, S0049: 1, H0309: 1, H0596: 1, H0123: 1, H0510: 1, H0284: 1, H0033: 1, H0424: 1, H0213: 1, H0090: 1, H0059: 1, T0004: 1, H0509: 1, L0765: 1, L0771: 1, L0794: 1, L0775: 1, L0376: 1, L0659: 1, L0365: 1, L0782: 1, L0809: 1, H0144: 1, H0547: 1, H0519: 1, H0651: 1, H0539: 1, S0332: 1, S0454: 1, S0206: 1, S0032: 1, L0779: 1, L0601: 1 and S0194: 1.		
42	HBJBM12	560606	52	47 - 142	556		AR060: 5, AR089: 5 H0318: 1 and L0753: 1.		
43	HBJCR46	815649	53	589 - 2787	557	Met-1 to Ala-8, Phe-42 to Asp-57,	H0038: 16, L0777: 12, L0758: 12, L0779: 11,		

						Tyr-105 to Thr-110, His-121 to Cys-127, Asp-154 to Lys-181, Arg-186 to Pro-210, Ala-233 to Asp-252, Ser-296 to Ser-306, Pro-313 to Ser-320, Gln-331 to Gly-346, Ser-355 to Thr-360, Cys-386 to Phe-395, Ser-400 to Glu-425, Thr-440 to Thr-446, Pro-449 to Cys-466, Glu-470 to Thr-509, Ser-512 to Asp-533, Ala-544 to Arg-550, Arg-562 to Glu-571, Lys-587 to Thr-594, Asp-713 to Glu-733.	L0803: 10, L0766: 7, S0358: 6, L0794: 6, L0775: 6, L0809: 6, H0616: 5, L0776: 5, L0750: 5, L0591: 5, S0408: 4, L0769: 4, L0748: 4, L0439: 4, L0747: 4, L0731: 4, S0282: 3, L0774: 3, L0789: 3, L0666: 3, L0438: 3, L0756: 3, L0780: 3, L0755: 3, L0757: 3, L0759: 3, L0588: 3, H0638: 2, H0036: 2, H0590: 2, H0318: 2, H0581: 2, H0196: 2, H0046: 2, H0154: 2, L0163: 2, H0213: 2, S0036: 2, L0804: 2, L0375: 2, L0655: 2, L0656: 2, L0659: 2, L0783: 2, S0374: 2, S0126: 2, H0659: 2, H0672: 2, S0328: 2, S0152: 2, H0521: 2, S0406: 2, L0605: 2, L0485: 2, L0362: 2, S0026: 2, H0543: 2, H0352: 2, H0170: 1, H0171: 1, H0713: 1, S6024: 1, H0650: 1, H0657: 1, H0656: 1, S0116: 1, H0341: 1, S0442: 1, S0354: 1, S0360: 1, H0580: 1, H0339: 1, S0045: 1, H0619: 1, H0437: 1, S0222: 1, H0333: 1, H0574: 1, L0623: 1, H0486: 1, L0586: 1, L0021: 1, H0599: 1, H0575: 1, H0618: 1, H0253: 1, H0230: 1, H0597: 1, H0544: 1, H0178: 1, H0123: 1, H0050: 1, L0471: 1, H0012: 1, H0620: 1,		

							S0050: 1, H0014: 1, H0373: 1, H0083: 1, S6028: 1, H0266: 1, S0003: 1, S0214: 1, H0033: 1, H0032: 1, H0673: 1, H0598: 1, H0163: 1, H0040: 1, H0551: 1, H0623: 1, H0100: 1, T0041: 1, H0561: 1, S0438: 1, S0440: 1, S0150: 1, H0641: 1, S0344: 1, S0002: 1, S0426: 1, H0529: 1, L0520: 1, L0770: 1, L0639: 1, L0372: 1, L0646: 1, L0800: 1, L0641: 1, L0773: 1, L0662: 1, L0767: 1, L0650: 1, L0653: 1, L0634: 1, L0526: 1, L0519: 1, L0787: 1, L0790: 1, L0663: 1, L0664: 1, L0665: 1, H0725: 1, S0148: 1, H0547: 1, H0684: 1, H0670: 1, H0522: 1, H0436: 1, H0540: 1, S0027: 1, L0741: 1, L0740: 1, L0751: 1, L0749: 1, L0786: 1, L0752: 1, L0608: 1, L0604: 1, S0192: 1 and S0276: 1.		
44	HBJDS79	813588	54	1032 - 1355	558	Met-1 to Gly-7.	AR089: 19, AR060: 18 L0769: 7, L0754: 7, L0777: 7, H0521: 5, L0809: 4, L0751: 4, H0556: 3, L0771: 3, L0776: 3, H0555: 3, H0624: 2, H0171: 2, S0442: 2, S0408: 2, H0318: 2, L0163: 2, H0673: 2, H0038: 2, S0142: 2, L0766: 2, H0539: 2, L0748: 2, L0439: 2, L0750: 2, L0756: 2,		

							L0731: 2, H0445: 2, H0265: 1, H0685: 1, H0717: 1, H0295: 1, H0294: 1, H0657: 1, H0663: 1, S0358: 1, H0580: 1, S0045: 1, L0717: 1, H0549: 1, S0222: 1, H0601: 1, H0600: 1, H0592: 1, H0574: 1, H0559: 1, H0486: 1, T0040: 1, H0069: 1, S0010: 1, H0052: 1, H0085: 1, L0040: 1, H0327: 1, H0150: 1, H0620: 1, H0024: 1, H0266: 1, T0006: 1, H0644: 1, S0366: 1, H0135: 1, H0090: 1, H0059: 1, L0351: 1, H0494: 1, S0438: 1, H0647: 1, H0529: 1, L0763: 1, L5565: 1, L0372: 1, L0644: 1, L0764: 1, L0773: 1, L0662: 1, L0768: 1, L0389: 1, L0805: 1, L0542: 1, L0783: 1, L0545: 1, L0792: 1, L0664: 1, S0374: 1, H0547: 1, H0658: 1, S0152: 1, H0696: 1, S0188: 1, S0406: 1, S0037: 1, S0027: 1, L0745: 1, L0746: 1, L0749: 1, L0753: 1, L0758: 1, H0444: 1, L0603: 1, S0026: 1 and H0506: 1.		
45	HBJDW56	520401	55	121 - 147	559		AR060: 7, AR089: 4 H0318: 1		
46	HBJEL16	847030	56	115 - 225	560		H0046: 2, H0009: 2, H0090: 2, H0494: 2, L0438: 2, H0547: 2, H0521: 2, L0439: 2, L0777: 2, H0543: 2, H0556: 1, S0342: 1,		

							S0045: 1, H0619: 1, H0632: 1, H0013: 1, H0156: 1, L0021: 1, H0575: 1, H0318: 1, S0003: 1, L0483: 1, H0628: 1, H0623: 1, H0561: 1, L0761: 1, L0803: 1, L0804: 1, L0659: 1, L0382: 1, H0144: 1, H0539: 1, S0152: 1, H0478: 1, H0631: 1, L0741: 1, L0740: 1 and L0591: 1.		
47	HBJFK45	531919	57	430 - 456	561		AR060: 2 H0318: 1 and L0766: 1.		
48	HBJIG20	866159	58	321 - 554	562		AR060:1184, AR104: 806, AR055: 765, AR061: 752, AR089: 676, AR096: 325 H0594: 11, H0596: 8, S0282: 5, S0260: 5, S0194: 5, H0543: 5, S0278: 2, H0600: 2, H0592: 2, H0598: 2, S0344: 2, H0595: 2, S0356: 1, H0438: 1, H0574: 1, H0599: 1, S0346: 1, H0318: 1, H0597: 1, S0388: 1, H0316: 1, S0390: 1 and H0542: 1.		
49	HBJKD16	853358	59	78 - 173	563		AR213: 43, AR272: 41, AR254: 36, AR205: 36, AR243: 35, AR245: 32, AR312: 32, AR212: 31, AR039: 31, AR311: 27, AR308: 27, AR096: 27, AR053: 23, AR089: 20, AR309: 19, AR253: 18, AR263: 16, AR264: 16, AR204: 16, AR250: 15, AR201: 15, AR207: 14, AR246: 14, AR198: 13,		

							AR271: 12, AR104: 11, AR060: 11, AR197: 11, AR252: 10, AR055: 10, AR061: 10, AR033: 7 L0439: 11, L0766: 9, H0673: 6, L0741: 6, L0747: 6, L0777: 5, L0438: 4, L0758: 4, L0362: 4, S0116: 3, T0010: 3, H0615: 3, H0038: 3, H0616: 3, L0764: 3, L0776: 3, L0748: 3, L0754: 3, L0752: 3, H0445: 3, S0358: 2, S0222: 2, H0574: 2, H0486: 2, S0280: 2, H0156: 2, H0264: 2, H0646: 2, L0761: 2, L0666: 2, S0206: 2, L0750: 2, L0779: 2, L0593: 2, S0242: 2, H0422: 2, H0170: 1, H0222: 1, H0650: 1, H0657: 1, H0661: 1, H0663: 1, H0589: 1, S0418: 1, S0376: 1, S0360: 1, S0408: 1, H0340: 1, H0580: 1, H0393: 1, H0549: 1, H0013: 1, H0069: 1, L0021: 1, S0010: 1, H0318: 1, H0597: 1, H0046: 1, H0439: 1, L0471: 1, H0428: 1, H0644: 1, H0212: 1, H0090: 1, S0386: 1, H0561: 1, S0344: 1, L0763: 1, L0638: 1, L0646: 1, L0521: 1, L0662: 1, L0364: 1, L0774: 1, L0659: 1, L0543: 1, L0792: 1, L0664: 1, L0665: 1, S0428: 1, H0435: 1, H0539: 1, S0378: 1, H0521: 1, H0696:		

							1, L0749: 1, L0753: 1, L0759: 1, S0434: 1, L0588: 1 and L0698: 1.		
50	HBMBM96	561935	60	170 - 184	564		AR089: 22, AR060: 13 L0766: 2, L0747: 2, H0392: 1, H0574: 1, H0421: 1, H0124: 1, L0776: 1, L0666: 1, S0146: 1, L0744: 1, L0745: 1, L0779: 1, H0543: 1 and H0423: 1.		
51	HBMBX01	705047	61	363 - 449	565		AR089: 22, AR060: 15 L0748: 5, H0318: 3, H0543: 3, H0484: 1, H0402: 1, S0474: 1, H0421: 1, H0052: 1, H0083: 1, H0266: 1, H0553: 1, H0272: 1, S0440: 1, S0142: 1, S0210: 1, S0002: 1, L0761: 1, L0766: 1, L0792: 1, H0520: 1, H0710: 1, L0747: 1, H0444: 1 and H0595: 1.		
52	HBMTM11	589515	62	125 - 220	566		AR089: 8, AR060: 7 L0754: 14, L0766: 13, L0740: 7, L0779: 6, L0755: 5, H0591: 4, L0756: 4, S0354: 3, L0663: 3, L0438: 3, L0777: 3, L0752: 3, L0362: 3, H0423: 3, H0624: 2, S0218: 2, S0212: 2, H0638: 2, S0360: 2, S0222: 2, H0014: 2, H0615: 2, H0412: 2, S0422: 2, S0002: 2, L0638: 2, L0764: 2, H0555: 2, L0439: 2, L0745: 2, L0753: 2, H0543: 2, H0170: 1, S0040: 1, S0134: 1, S0116: 1, H0669: 1, H0637: 1, S0046: 1, L0717:		

							1, S6016: 1, H0497: 1, H0333: 1, H0632: 1, H0485: 1, H0486: 1, H0013: 1, H0427: 1, H0156: 1, L0021: 1, H0122: 1, H0318: 1, H0596: 1, H0546: 1, H0046: 1, H0457: 1, H0123: 1, H0375: 1, S6028: 1, H0179: 1, S0250: 1, H0428: 1, H0553: 1, H0644: 1, H0674: 1, H0634: 1, H0063: 1, H0264: 1, H0623: 1, H0561: 1, H0646: 1, H0529: 1, L0761: 1, L0662: 1, L0767: 1, L0649: 1, L0774: 1, L0775: 1, L0375: 1, L0805: 1, L0776: 1, L0658: 1, L0518: 1, L0783: 1, L0809: 1, L0647: 1, L0367: 1, L0789: 1, L0792: 1, L0666: 1, L0664: 1, H0519: 1, H0690: 1, H0670: 1, H0648: 1, S0330: 1, S0378: 1, H0436: 1, S0390: 1, S0028: 1, L0758: 1, L0759: 1, H0668: 1, S0412: 1 and S0424: 1.		
53	HBMTX26	695704	63	107 - 376	567		AR089: 32, AR060: 16 S0116: 1 and T0042: 1.		
54	HBMTY48	637521	64	660 - 944	568	Glu-35 to Pro-50.	AR198: 16, AR039: 14, AR271: 13, AR312: 13, AR186: 12, AR096: 11, AR089: 10, AR204: 10, AR104: 10, AR052: 9, AR213: 9, AR273: 9, AR243: 9, AR053: 8, AR194: 8, AR206: 8, AR060: 7, AR246: 6,		

							AR309: 6, AR263: 6, AR244: 6, AR202: 6, AR205: 5, AR055: 5, AR033: 5, AR061: 5, AR310: 4, AR249: 4, AR265: 3, AR248: 2 S0116: 1, H0591: 1, L0766: 1 and H0690: 1.		
55	HBMUH74	866160	65	344 - 430	569		AR060: 7, AR089: 4 L0754: 3, L0777: 3, L0439: 2, S0116: 1, H0341: 1, H0661: 1, H0038: 1, H0412: 1, L0761: 1, L0667: 1, L0764: 1, L0788: 1, H0435: 1, L0749: 1, L0779: 1 and L0758: 1.		
56	HBMWE61	778066	66	238 - 267	570		AR060: 9, AR089: 7 S0116: 1		
57	HBNAX40	834801	67	2497 - 2646	571		AR089: 6, AR060: 6 L0439: 11, H0171: 5, L0754: 5, L0748: 4, H0052: 3, L0662: 3, L0756: 3, L0755: 3, H0422: 3, S0360: 2, L0738: 2, H0032: 2, L0803: 2, L0655: 2, L0789: 2, L0605: 2, H0423: 2, H0638: 1, T0114: 1, H0156: 1, L0021: 1, S0010: 1, H0581: 1, H0046: 1, L0471: 1, H0014: 1, H0356: 1, H0188: 1, H0553: 1, H0591: 1, S0386: 1, T0042: 1, H0625: 1, H0641: 1, S0142: 1, L0598: 1, L0369: 1, L0640: 1, L0375: 1, L0654: 1, L0659: 1, L0783: 1, L0663: 1, L0665: 1, H0144: 1, L0352: 1, H0547: 1,		

							H0648: 1, H0672: 1, H0555: 1, H0436: 1, L0749: 1, L0779: 1, L0731: 1, L0758: 1, L0759: 1, H0445: 1, L0366: 1 and H0668: 1.		
58	HBNBJ76	810332	68	1603 - 1809	572	Arg-59 to Ser-64.	AR089: 12, AR060: 11 H0052: 18, L0439: 18, L0766: 10, S0222: 8, L0751: 7, L0741: 6, H0188: 5, H0617: 5, L0438: 5, S0360: 4, L0764: 4, L0748: 4, L0740: 4, L0753: 4, H0265: 3, S0040: 3, S0356: 3, H0333: 3, H0013: 3, T0010: 3, H0622: 3, H0040: 3, L0666: 3, H0520: 3, H0547: 3, H0519: 3, L0747: 3, L0750: 3, L0759: 3, S0436: 3, H0556: 2, H0255: 2, H0664: 2, H0458: 2, L0005: 2, H0728: 2, H0549: 2, H0581: 2, H0309: 2, H0009: 2, H0178: 2, H0124: 2, H0135: 2, H0090: 2, L0351: 2, H0494: 2, L0770: 2, L0662: 2, L0803: 2, L0665: 2, H0144: 2, L0565: 2, H0435: 2, H0696: 2, H0134: 2, H0626: 2, L0742: 2, L0754: 2, L0757: 2, S0011: 2, H0295: 1, H0294: 1, H0583: 1, H0341: 1, S0418: 1, S0420: 1, S0442: 1, S0354: 1, S0007: 1, S0476: 1, H0619: 1, H0351: 1, H0441: 1, H0331: 1, H0486: 1, H0427: 1, H0599: 1, H0575: 1, H0618: 1, S0010:		

							1, T0048: 1, S0049: 1, H0263: 1, H0596: 1, H0530: 1, H0046: 1, H0050: 1, H0093: 1, S0388: 1, H0290: 1, H0328: 1, H0615: 1, H0428: 1, T0023: 1, H0030: 1, H0031: 1, H0628: 1, H0181: 1, H0182: 1, H0032: 1, H0673: 1, L0455: 1, S0036: 1, H0038: 1, H0063: 1, H0551: 1, H0264: 1, S0038: 1, S0142: 1, S0344: 1, S0422: 1, L0598: 1, L0763: 1, L0769: 1, L0768: 1, L0376: 1, L0806: 1, L0776: 1, L0629: 1, L0807: 1, L4501: 1, L0663: 1, T0068: 1, H0658: 1, H0672: 1, S0328: 1, S0152: 1, S3014: 1, S0028: 1, L0745: 1, L0756: 1, L0780: 1, S0260: 1, H0445: 1, L0591: 1, L0603: 1, S0196: 1, H0542: 1, H0423: 1, H0422: 1, L0600: 1 and H0352: 1.		
59	HBQAB79	810542	69	190 - 225	573		AR060: 6, AR089: 4 H0229: 1		
60	HBQAC57	793814	70	146 - 235	574		H0229: 1 and L0780: 1.		
61	HBSAK32	856387	71	447 - 590	575		AR089: 12, AR060: 11 L0749: 3, H0620: 2, H0040: 2, L0517: 2, L0790: 2, L0743: 2, L0751: 2, H0170: 1, H0381: 1, S0001: 1, S0282: 1, S0354: 1, H0486: 1, H0013: 1, L0021: 1, H0318: 1, H0012: 1, H0288: 1, H0688: 1, H0622: 1, H0551: 1, S0112: 1,		

							H0509: 1, L0640: 1, L0374: 1, L0766: 1, L0774: 1, L0651: 1, L0776: 1, L0657: 1, L0783: 1, L0809: 1, L0519: 1, H0144: 1, H0658: 1, H0670: 1, H0522: 1, L0747: 1, L0750: 1, L0777: 1, L0755: 1, L0758: 1, L0759: 1, H0445: 1 and S0424: 1.		
62	HBXCM66	639039	72	119 - 169	576		AR089: 33, AR060: 13 H0550: 2, L0523: 2, S0282: 1, S0045: 1, H0549: 1, H0052: 1 and S0038: 1.		
63	HBXCX15	637542	73	72 - 77	577		S0038: 3, H0438: 1, L0363: 1 and S0053: 1.		
64	HCDCY76	837972	74	860 - 967	578	Pro-20 to Phe-25.	AR060: 2 L0770: 2, L0754: 2, L0747: 2, L0777: 2, S0360: 1, S0045: 1, H0486: 1, H0251: 1, H0616: 1, L0803: 1, L0775: 1, L0783: 1, L0787: 1, L0789: 1, L0750: 1, S0194: 1 and S0276: 1.		
65	HCDDL48	839743	75	333 - 455	579	Thr-26 to Tyr-38.	AR060: 4, AR089: 1 H0251: 1		
66	HCE1G78	761204	76	77 - 841	580	Asp-20 to Thr-26, Leu-30 to Gly-38, Asp-63 to Phe-72, Gly-160 to Trp-175, Gly-189 to Ser-197, Thr-214 to Val-221.	AR060: 9, AR089: 6 L0439: 8, S0356: 2, L0803: 2, L0809: 2, L0666: 2, L0752: 2, H0052: 1, H0194: 1, H0617: 1, H0040: 1, H0100: 1, L0774: 1, L0787: 1 and L0593: 1.		
67	HCE2H52	847007	77	29 - 100	581		AR060: 6, AR089: 5 H0255: 2, H0052: 1, H0673: 1, H0538: 1, H0444: 1 and H0445: 1.		
68	HCE3B04	831151	78	1588 - 1686	582		AR089: 10, AR060: 7		

							L0803: 8, L0740: 6, L0756: 6, L0666: 5, S0152: 5, L0752: 5, L0766: 4, H0052: 3, H0038: 3, L0663: 3, H0596: 2, H0628: 2, H0032: 2, L0649: 2, L0659: 2, L0791: 2, L0748: 2, L0758: 2, L0594: 2, H0423: 2, H0171: 1, S0040: 1, H0650: 1, S0116: 1, S0282: 1, S0358: 1, S0360: 1, H0637: 1, H0393: 1, L0717: 1, H0351: 1, T0039: 1, H0013: 1, H0156: 1, H0575: 1, H0590: 1, S0346: 1, H0544: 1, L0471: 1, S6028: 1, S0003: 1, H0328: 1, H0030: 1, H0553: 1, H0598: 1, H0040: 1, H0551: 1, H0264: 1, H0413: 1, H0494: 1, H0561: 1, H0529: 1, L0763: 1, L0770: 1, L0646: 1, L0800: 1, L0642: 1, L0662: 1, L0794: 1, L0804: 1, L0774: 1, L0775: 1, L0375: 1, L0805: 1, L0634: 1, L0809: 1, L0664: 1, S0374: 1, L0352: 1, H0520: 1, H0519: 1, S0126: 1, S0328: 1, H0539: 1, L0750: 1, L0779: 1, H0445: 1, H0707: 1, L0592: 1, L0485: 1, L0595: 1, S0026: 1, H0665: 1, S0192: 1 and H0506: 1.		
69	HCE5F78	838101	79	566 - 664	583	Tyr-21 to Lys-30.	H0052: 2 and H0445: 2.		
70	HCEDR26	771144	80	177 - 344	584		AR089: 23, AR060: 13 H0052: 2, H0018: 1, H0264: 1 and L0700: 1.		

71	HCEEE79	560609	81	131 - 298	585	Gly-35 to Pro-41.	H0052: 1		
72	HCEEQ25	531784	82	111 - 182	586	Met-14 to Asn-19.	AR060: 6, AR089: 5 H0052: 1 and H0144: 1.		
73	HCEEU18	688041	83	209 - 340	587		AR089: 20, AR060: 11 H0341: 49, L0588: 47, H0087: 18, H0333: 13, H0024: 13, H0370: 12, H0318: 12, S0046: 11, L0748: 11, S0134: 10, H0012: 10, L0604: 10, H0255: 9, S0007: 9, H0351: 9, H0170: 8, H0597: 8, H0123: 8, H0063: 8, L0599: 8, L0601: 8, L0603: 8, S0040: 7, H0052: 7, H0068: 7, H0135: 7, H0059: 7, T0041: 7, H0144: 7, S0126: 7, S0218: 6, S0045: 6, S0278: 6, H0040: 6, T0042: 6, S0142: 6, H0134: 6, S3012: 6, S0028: 6, L0591: 6, L0362: 6, H0352: 6, H0306: 5, S0222: 5, H0041: 5, H0081: 5, H0252: 5, H0169: 5, H0090: 5, H0038: 5, H0100: 5, S0027: 5, L0596: 5, L0590: 5, L0361: 5, S0011: 5, H0220: 4, S0114: 4, T0049: 4, H0125: 4, T0039: 4, T0109: 4, H0250: 4, T0082: 4, H0204: 4, H0083: 4, S0044: 4, S3014: 4, S0206: 4, L0747: 4, S0026: 4, H0265: 3, T0002: 3, S6024: 3, S0116: 3, S0132: 3, H0411: 3, H0486: 3, T0060: 3, H0069: 3, H0156: 3, H0036: 3,		

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74	HCEFZ82	831745	84	215 - 1012	588	Tyr-30 to Gln-35, Asn-114 to Lys-119, Ser-161 to Ala-171, Arg-183 to Gly-189, Pro-205 to Ala-211, Lys-231 to Trp-237, Gly-246 to Lys-265.	L0748: 11, H0052: 8, L0749: 8, L0803: 6, L0770: 5, L0439: 5, L0752: 4, H0575: 2, H0012: 2, H0031: 2, L0768: 2, L0804: 2, L0774: 2, L0740: 2, L0747: 2, L0756: 2, L0779: 2, L0757: 2, L0758: 2, L0592: 2, L0593: 2, H0556: 1, S0420: 1, S0376: 1, H0441: 1, H0632: 1, S0010: 1, T0115: 1, H0545: 1, H0009: 1, H0620: 1, H0197: 1, H0051: 1, S0388: 1, S0051:		

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75	HCEGX05	827060	85	237 - 284	589	Pro-4 to Phe-11.	AR089: 11, AR060: 6 L0766: 11, L0748: 5, L0757: 4, L0662: 3, H0587: 2, L0041: 2, H0039: 2, L0659: 2, L0438: 2, H0672: 2, H0521: 2, L0750: 2, L0758: 2, L0596: 2, L0589: 2, L0605: 2, H0265: 1, H0341: 1, S0222: 1, H0600: 1, L0623: 1, H0069: 1, H0052: 1, H0569: 1, S0388: 1, T0010: 1, L0055: 1, L0456: 1, H0560: 1, H0641: 1, S0426: 1, L0770: 1, L0769: 1, L5575: 1, L0794: 1, L0776: 1, L0783: 1, L0382: 1, L0666: 1, L0663: 1, S0052: 1, S0216: 1, H0702: 1, H0670: 1, H0539: 1, H0522: 1, S0406: 1, S0390: 1, L0743: 1, L0744: 1, L0439: 1, L0740: 1, L0747: 1, L0779: 1, L0777: 1, H0445: 1, H0542: 1, H0423: 1 and H0422: 1.		
76	HCFLN88	610000	86	101 - 178	590		L0748: 9, L0770: 6, L0769: 6, L0776: 6, H0424: 5, L0754: 5, L0766: 4, L0761:		

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77	HCFLT90	788578	87	527 - 532	591		AR089: 13, AR060: 10 L0777: 11, L0745: 9, L0754: 7, L0769: 4, L0747: 4, L0779: 4, L0757: 4, L0649: 3, L0439: 3, L0749: 3, H0580: 2, H0266: 2, H0181: 2, H0617: 2, L0770: 2, L0775: 2, H0659: 2, H0651: 2, H0522: 2, L0748:		

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78	HCHAB84	834326	88	304 - 747	592	Asn-47 to Leu-52, Tyr-134 to Trp-143.	AR089: 20, AR060: 8 S0354: 9, S0358: 3, H0494: 3, H0519: 2, H0521: 2, L0754: 2, H0170: 1, S0040: 1, S0114: 1, H0484: 1, H0483: 1, H0255: 1, S0376: 1, S0046: 1, H0619: 1, H0549: 1, H0042: 1, S0474: 1, H0581: 1, H0052: 1, H0083: 1, L0773: 1, L0517: 1, L0383: 1, S0374: 1, S0152: 1, S3014: 1, L0751: 1, L0759: 1, H0543: 1 and H0422: 1.		
79	HCMSX51	788643	89	539 - 781	593	Leu-57 to Glu-66.	L0740: 16, L0745: 7, L0439: 6, L0438: 4, H0547: 4, L0750: 4, L0759: 4,		

							H0618: 3, L0749: 3, H0619: 2, H0393: 2, H0599: 2, H0083: 2, H0124: 2, H0623: 2, H0100: 2, L0770: 2, S0027: 2, L0743: 2, L0746: 2, L0777: 2, L0758: 2, L0603: 2, S0420: 1, S0358: 1, H0261: 1, H0392: 1, H0013: 1, H0250: 1, H0196: 1, H0545: 1, H0046: 1, H0123: 1, H0620: 1, S0051: 1, S0250: 1, H0617: 1, S0036: 1, H0135: 1, H0634: 1, H0087: 1, H0269: 1, H0509: 1, H0646: 1, S0426: 1, L0763: 1, L0769: 1, L0662: 1, L0363: 1, L0767: 1, L0768: 1, L0650: 1, L0375: 1, L0806: 1, L0776: 1, L0657: 1, L0787: 1, L0664: 1, H0520: 1, H0670: 1, H0704: 1, S0406: 1, H0436: 1, L0747: 1, L0608: 1, L0595: 1 and H0423: 1.		
80	HCNCO11	775086	90	101 - 145	594		AR060: 2 H0597: 1		
81	HCNSD29	862314	91	1145 - 1240	595		AR252: 128, AR253: 67, AR245: 63, AR272: 55, AR308: 49, AR246: 47, AR263: 46, AR212: 40, AR053: 37, AR243: 35, AR312: 34, AR254: 33, AR205: 33, AR309: 32, AR264: 31, AR250: 31, AR197: 31, AR271: 29, AR311: 26, AR201: 25, AR198: 25, AR104: 19, AR096: 18, AR213: 17,		

							AR039: 15, AR204: 14, AR033: 13, AR207: 12, AR089: 12, AR060: 8, AR055: 6, AR061: 3 H0202: 2, L0648: 2, L0768: 2, L0766: 2, L0748: 2, L0759: 2, L0588: 2, H0125: 1, S0468: 1, H0497: 1, H0486: 1, H0231: 1, H0266: 1, H0641: 1, L0638: 1, L0644: 1, L5572: 1, L0662: 1, L0650: 1, L0807: 1, L0657: 1, L0663: 1, L0665: 1, H0519: 1, H0478: 1, S0026: 1 and L0718: 1.		
82	HCQBH72	637548	92	31 - 174	596		AR060: 2, AR089: 2 L0520: 4, L0754: 2, H0263: 1, H0272: 1 and H0555: 1.		
83	HCQCC96	845066	93	782 - 919	597		AR252: 46, AR197: 44, AR204: 38, AR253: 34, AR254: 31, AR250: 28, AR198: 28, AR243: 26, AR061: 23, AR201: 23, AR055: 22, AR039: 21, AR104: 19, AR245: 18, AR271: 18, AR033: 16, AR207: 15, AR053: 15, AR272: 14, AR205: 14, AR246: 14, AR089: 11, AR096: 10, AR308: 10, AR060: 10, AR212: 10, AR213: 10, AR309: 8, AR312: 8, AR264: 7, AR263: 5, AR311: 5 L0766: 8, S0360: 5, L0748: 5, L0756: 5, L0666: 4, L0665: 4, L0770: 3, L0752:		

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84	HCQCJ56	832157	94	728 - 733	598		AR060: 5, AR089: 3 L0779: 4, L0777: 3, H0050: 2, H0670: 2, L0748: 2, L0717: 1, H0596: 1, L0641: 1, L0794: 1, L0803: 1, L0774: 1, L0809: 1, L0749: 1 and S0242: 1.		
85	HCQCM24	845070	95	815 - 931	599		AR089: 8, AR060: 7		

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86	HCRAY10	695709	96	141 - 578	600		AR089: 10, AR060: 10 L0758: 6, H0545: 3, L0754: 3, L0759: 3, H0170: 2, L0766: 2, L0649: 2, L0665: 2, H0696: 2, H0177: 1, H0549: 1, H0392: 1, H0327: 1, L0695: 1, H0674: 1, H0529: 1, L0762: 1,		

							L0769: 1, L0800: 1, L0658: 1, L0809: 1, L0740: 1 and L0777: 1.		
87	HCRBF72	828945	97	191 - 823	601	Gln-43 to Asn-49, Glu-59 to Gln-65, Lys-90 to Val-95, Glu-205 to Ser-211.	AR033: 3, AR197: 2, AR060: 2, AR311: 2, AR271: 2, AR309: 1, AR089: 1 L0794: 7, H0551: 4, H0618: 3, H0617: 3, L0769: 3, L0747: 3, H0556: 2, S0356: 2, L0771: 2, L0789: 2, L0748: 2, L0757: 2, L0758: 2, L0596: 2, L0601: 2, H0170: 1, H0295: 1, H0650: 1, H0657: 1, H0341: 1, H0254: 1, H0580: 1, S0045: 1, H0370: 1, L0623: 1, H0013: 1, H0069: 1, H0706: 1, H0253: 1, H0581: 1, H0327: 1, H0546: 1, H0545: 1, H0178: 1, H0083: 1, H0266: 1, L0483: 1, H0606: 1, L0055: 1, H0165: 1, H0068: 1, H0616: 1, H0087: 1, H0059: 1, H0494: 1, S0438: 1, S0422: 1, H0529: 1, L5575: 1, L0372: 1, L0768: 1, L0387: 1, L0806: 1, L0809: 1, L5623: 1, S0148: 1, H0547: 1, H0435: 1, H0660: 1, H0666: 1, S0152: 1, H0521: 1, H0696: 1, H0627: 1, H0631: 1, L0743: 1, L0749: 1, L0750: 1, L0779: 1, L0759: 1, L0593: 1, H0665: 1, S0192: 1 and H0543: 1.		
88	HCRNF78	793774	98	363 - 503	602		AR089: 2		

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89	HCUAF85	589520	99	230 - 595	603		AR265: 4, AR253: 3, AR202: 3, AR251: 2, AR186: 2, AR055: 2, AR205: 2, AR033: 2, AR248: 2, AR271: 2, AR206: 1, AR213: 1, AR310: 1, AR053: 1, AR061: 1, AR273: 1, AR052: 1, AR263: 1 H0306: 2 and H0305: 1.		
90	HCUCF89	637986	100	189 - 278	604	Gly-14 to Asp-21.	AR089: 10, AR060: 4 H0306: 1		
91	HCUCK44	790277	101	598 - 780	605		AR245: 3, AR252: 3, AR311: 2, AR264: 1, AR212: 1, AR096: 1, AR213: 1, AR089: 1, AR201: 1 H0271: 19, S0002: 12, H0250: 8, S0144: 8, L0794: 8, L0777: 7, L0665: 6, H0518: 6, S0132: 5, H0264: 5, S0426: 5, S0328: 5, S0330: 5, L0758: 5, S0444: 4, S0344: 4, L0776: 4, L0659: 4, S0052: 4, S0053: 4, L0743: 4, L0747: 4,		

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							L0782: 1, L0787: 1, S0374: 1, H0690: 1, H0659: 1, H0658: 1, S0378: 1, H0710: 1, S0152: 1, H0696: 1, H0704: 1, S0406: 1, H0436: 1, L0744: 1, L0756: 1, L0779: 1, L0780: 1, L0755: 1, L0759: 1, S0031: 1, L0581: 1, L0601: 1, L0603: 1, S0196: 1 and H0352: 1.		
92	HCUDD64	835082	102	256 - 402	606	Met-1 to Ser-6, Gln-32 to Asn-39.	H0052: 3, S3012: 2, L0754: 2, H0402: 1, H0413: 1, S0374: 1, L0438: 1, L0748: 1 and L0740: 1.		
93	HCWAE64	535893	103	410 - 427	607		H0305: 1		
94	HCWFU39	651316	104	282 - 350	608		AR089: 3, AR060: 1 H0305: 3, L0439: 3, L0740: 3, L0581: 2, H0589: 1, H0156: 1, S0346: 1, H0318: 1, S0049: 1, H0052: 1, L0157: 1, T0010: 1 and L0438: 1.		
95	HCWUL09	834722	105	333 - 368	609		H0305: 9, H0589: 2 and S0001: 1.		
96	HDHAA42	695710	106	48 - 128	610		AR089: 9, AR060: 8 H0616: 4, L0803: 3, H0555: 3, H0038: 2, L0809: 2, L0439: 2, L0759: 2, L0005: 1, S0049: 1, H0569: 1, S0050: 1, L0163: 1, S0003: 1, L0771: 1, L0649: 1, L0804: 1, L0774: 1, L0775: 1, L0784: 1, L0659: 1, L0788: 1, L0664: 1, L0438: 1, H0648: 1, S0330: 1, L0602: 1, L0744: 1, L0748: 1, L0745: 1, L0747: 1, L0749: 1, L0752: 1,		

							L0758: 1, L0608: 1, S0196: 1 and S0412: 1.		
97	HDHEB76	553622	107	416 - 454	611		AR060: 2 S0045: 6, S0046: 5, H0570: 2, H0030: 2, H0644: 2, L0435: 2, L0803: 2, L0731: 2, L0588: 2, H0170: 1, H0713: 1, T0049: 1, H0599: 1, H0581: 1, S0250: 1, H0213: 1, H0413: 1, H0623: 1, S0112: 1, S0344: 1, L0769: 1, L0794: 1, L0788: 1, S0032: 1, L0439: 1, L0758: 1 and L0605: 1.		
98	HDPCW16	840358	108	172 - 339	612	Met-1 to Ser-7.	AR089: 35, AR060: 4 L0783: 7, H0441: 5, L0666: 4, L0748: 4, H0484: 3, H0544: 3, L0659: 3, H0521: 3, L0439: 3, T0049: 2, H0657: 2, H0661: 2, S0420: 2, L0717: 2, H0370: 2, H0586: 2, H0009: 2, L0471: 2, H0617: 2, H0494: 2, H0529: 2, L0769: 2, L0764: 2, L0662: 2, L0517: 2, L0792: 2, L0663: 2, S6024: 1, H0341: 1, H0255: 1, H0664: 1, H0402: 1, S0418: 1, S0045: 1, S0046: 1, S0278: 1, H0600: 1, H0592: 1, H0497: 1, H0333: 1, L0021: 1, H0618: 1, H0046: 1, H0041: 1, H0178: 1, L0157: 1, S0250: 1, T0069: 1, L0351: 1, H0625: 1, H0641: 1, L0502: 1, L0770: 1, L0645: 1, L0533: 1, L0493: 1, L0518: 1,		

							L0782: 1, L0809: 1, L0787: 1, L0789: 1, L0665: 1, L0438: 1, H0520: 1, S0126: 1, H0690: 1, H0539: 1, L0609: 1, L0612: 1, L0743: 1, L0747: 1, L0749: 1, L0786: 1, L0779: 1, L0731: 1, L0758: 1, L0759: 1, H0653: 1 and S0424: 1.		
99	HDPDI72	897277	109	23 - 385	613	Arg-63 to Phe-72, Ile-114 to Phe-120.	AR263: 7, AR089: 5, AR060: 3, AR249: 3, AR206: 1, AR052: 1, AR312: 1, AR309: 1 H0521: 4, S0358: 1 and S0374: 1.		
100	HDPDJ58	587265	110	279 - 341	614		AR263: 8, AR249: 6, AR053: 5, AR312: 5, AR309: 4, AR052: 4, AR198: 4, AR253: 4, AR243: 3, AR096: 3, AR213: 3, AR310: 2, AR273: 2, AR186: 2, AR104: 2, AR206: 2, AR060: 1, AR205: 1, AR033: 1, AR039: 1 L0766: 6, H0457: 5, H0581: 2, H0090: 2, H0521: 2, L0748: 2, H0171: 1, H0656: 1, S0212: 1, S0140: 1, H0261: 1, H0486: 1, H0156: 1, H0123: 1, L0471: 1, H0591: 1, T0041: 1, S0344: 1, S0426: 1, L0387: 1, L0776: 1, L0655: 1, L0367: 1, L0792: 1, L0438: 1, H0690: 1, H0539: 1, H0436: 1, L0439: 1, L0779: 1, L0780: 1, L0755: 1 and		

							H0422: 1.		
101	HDPFF10	853513	111	186 - 1463	615	Trp-19 to Gly-24, Phe-101 to His-106, Glu-119 to Thr-124.	AR243: 14, AR246: 11, AR197: 9, AR205: 8, AR245: 8, AR264: 7, AR272: 6, AR039: 6, AR263: 5, AR096: 5, AR201: 5, AR250: 4, AR198: 4, AR089: 3, AR309: 3, AR204: 3, AR207: 3, AR060: 2, AR312: 2, AR055: 2, AR061: 1, AR033: 1 H0521: 7, L0599: 2, H0265: 1, H0717: 1, H0363: 1, H0545: 1, H0652: 1, L0764: 1, L0803: 1, L0805: 1 and H0518: 1.		
102	HDPFU43	790189	112	220 - 378	616		AR060: 7, AR089: 7 H0585: 9, H0622: 4, S0126: 4, H0141: 3, S0474: 3, H0553: 3, H0539: 3, L0750: 3, H0556: 2, H0717: 2, H0581: 2, S0440: 2, S0344: 2, S0422: 2, L0771: 2, L0774: 2, L0664: 2, S0380: 2, H0521: 2, L0751: 2, L0755: 2, H0650: 1, H0306: 1, S0420: 1, L0617: 1, S0444: 1, S0360: 1, H0580: 1, S0046: 1, H0619: 1, H0549: 1, H0587: 1, H0486: 1, T0039: 1, L0021: 1, H0274: 1, H0457: 1, H0012: 1, H0620: 1, S0003: 1, S0214: 1, H0615: 1, H0628: 1, H0087: 1, H0551: 1, S0438: 1, H0529: 1, L0770: 1, L0761: 1, L0767:		

							1, L0768: 1, L0804: 1, L0515: 1, L0809: 1, H0703: 1, H0711: 1, H0672: 1, S0378: 1, H0522: 1, H0696: 1, H0555: 1, S3014: 1, L0754: 1, L0747: 1, L0749: 1, L0731: 1, H0445: 1, S0436: 1, L0581: 1, S0026: 1, H0543: 1 and H0423: 1.		
103	HDPFY18	779450	113	161 - 184	617		AR089: 2, AR060: 1 S0114: 1, H0427: 1, H0123: 1, H0688: 1, H0264: 1, L0547: 1, L0518: 1, H0521: 1, H0445: 1 and H0543: 1.		
104	HDPGE24	801947	114	173 - 394	618		H0555: 8, S0002: 7, L0748: 6, H0556: 5, S0222: 5, H0179: 5, L0369: 5, S0045: 3, H0427: 3, H0599: 3, H0575: 3, H0271: 3, H0628: 3, H0598: 3, S0426: 3, L0766: 3, L0581: 3, H0265: 2, S0114: 2, S0212: 2, H0402: 2, S0354: 2, S0132: 2, H0431: 2, H0370: 2, H0632: 2, H0581: 2, H0196: 2, H0050: 2, L0665: 2, H0521: 2, S0390: 2, S0028: 2, L0777: 2, H0444: 2, H0423: 2, S0040: 1, L0002: 1, H0381: 1, S0116: 1, H0255: 1, H0662: 1, S0442: 1, S0360: 1, H0676: 1, H0580: 1, H0722: 1, S0046: 1, S0300: 1, L0717: 1, H0586: 1, H0333: 1, H0486: 1, H0706: 1, H0036: 1, T0048: 1, H0318: 1, S0474:		

							1, H0309: 1, H0121: 1, H0544: 1, S0050: 1, H0375: 1, H0266: 1, S0003: 1, S0214: 1, H0252: 1, H0031: 1, H0644: 1, H0124: 1, H0708: 1, H0400: 1, H0063: 1, H0264: 1, S0038: 1, H0280: 1, H0334: 1, H0625: 1, S0440: 1, H0509: 1, H0132: 1, S0210: 1, L0803: 1, L0525: 1, L0555: 1, L0529: 1, L0367: 1, L0532: 1, S0052: 1, S0428: 1, S0216: 1, H0547: 1, H0519: 1, S0126: 1, H0134: 1, S0406: 1, H0727: 1, H0345: 1, S0037: 1, L0740: 1, L0749: 1, S0031: 1, H0445: 1, H0707: 1, S0436: 1, L0605: 1, L0604: 1, L0601: 1 and H0543: 1.		
105	HDPIU94	813352	115	208 - 279	619		AR060: 12, AR089: 8 L0748: 5, L0595: 4, S0045: 3, H0124: 3, S0028: 3, L0439: 3, L0756: 3, S0360: 2, H0619: 2, S0222: 2, H0036: 2, H0052: 2, H0046: 2, L0041: 2, S0312: 2, H0551: 2, L0666: 2, H0144: 2, L0777: 2, L0592: 2, H0653: 2, H0136: 2, H0216: 2, H0624: 1, S0430: 1, H0656: 1, H0255: 1, S0376: 1, S0046: 1, H0645: 1, H0370: 1, H0013: 1, H0635: 1, H0156: 1, H0575: 1, H0050: 1, H0373: 1, H0687: 1, S0314: 1, S0250: 1,		

							H0031: 1, H0135: 1, H0634: 1, H0616: 1, H0264: 1, H0433: 1, H0059: 1, L0800: 1, L0764: 1, L0768: 1, L0766: 1, L0774: 1, L0375: 1, L0655: 1, L0809: 1, L0664: 1, L0665: 1, S0152: 1, H0521: 1, S0390: 1, S3014: 1, L0754: 1, L0745: 1, L0749: 1, L0750: 1, L0731: 1, S0260: 1, L0589: 1 and L0366: 1.		
106	HDPOC24	777493	116	418 - 819	620	Pro-36 to Cys-42, Pro-44 to Cys-54, Arg-100 to Gly-105.	H0585: 26, H0141: 12, L0666: 9, L0754: 9, L0755: 9, S0212: 6, L0663: 5, L0743: 5, S0356: 4, H0587: 4, H0553: 4, L0657: 4, L0382: 4, L0740: 4, L0747: 4, S0045: 3, S0046: 3, H0024: 3, L0771: 3, L0648: 3, L0662: 3, L0659: 3, L0664: 3, S0126: 3, H0522: 3, L0748: 3, L0777: 3, L0757: 3, S0192: 3, S0040: 2, S0420: 2, S0358: 2, H0550: 2, H0250: 2, H0575: 2, H0052: 2, H0546: 2, H0266: 2, H0100: 2, H0646: 2, S0002: 2, L0763: 2, L0649: 2, L0803: 2, L0775: 2, L0653: 2, L0517: 2, L0809: 2, L0790: 2, L0665: 2, H0660: 2, S0380: 2, H0521: 2, S3014: 2, S0028: 2, L0751: 2, H0665: 2, S0430: 1, H0341: 1, S0282: 1, H0664: 1, S0418: 1, S0354: 1, H0549: 1, S0222:		

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107	HDPOL37	745377	117	189 - 377	621	Met-1 to Arg-8, Gly-29 to Glu-36.	AR089: 14, AR060: 11, AR244: 5, AR265: 4, AR310: 2, AR271: 2, AR309: 1, AR312: 1 H0618: 2, H0040: 1 and H0522: 1.		
108	HDPOO76	838594	118	109 - 159	622		AR089: 546, AR060: 243 S0474: 19, L0766: 11, H0521: 10, L0803: 6, L0748: 6, L0717: 5, L0759: 5, S0003: 4, H0663: 3,		

							H0156: 3, L0598: 3, L0771: 3, L0804: 3, H0522: 3, L0731: 3, S0436: 3, H0486: 2, S0426: 2, L0770: 2, L0659: 2, S0126: 2, S0406: 2, L0749: 2, L0755: 2, L0757: 2, L0758: 2, L0590: 2, S0026: 2, H0716: 1, H0341: 1, S0212: 1, L0481: 1, S0444: 1, S0360: 1, H0637: 1, H0580: 1, H0734: 1, H0619: 1, H0586: 1, H0574: 1, H0427: 1, L0021: 1, H0575: 1, H0318: 1, H0545: 1, H0024: 1, H0373: 1, H0071: 1, H0179: 1, S0214: 1, H0428: 1, H0674: 1, H0591: 1, H0616: 1, H0488: 1, H0494: 1, S0438: 1, S0440: 1, H0647: 1, S0142: 1, UNKWN: 1, L0369: 1, L0763: 1, L0769: 1, L0646: 1, L0648: 1, L0662: 1, L0650: 1, L0775: 1, L0805: 1, L0653: 1, L0776: 1, L0656: 1, L0782: 1, L0809: 1, L0519: 1, S0052: 1, H0144: 1, H0520: 1, H0547: 1, H0660: 1, S0380: 1, L0742: 1, L0439: 1, L0750: 1, L0777: 1, S0031: 1, H0445: 1, S0434: 1, H0665: 1, H0667: 1, S0194: 1, S0276: 1 and S0458: 1.		
109	HDPPD93	637588	119	28 - 66	623		AR202: 68, AR194: 68, AR244: 59, AR205: 52, AR246: 50, AR039: 38,		

							AR271: 38, AR243: 37, AR204: 33, AR263: 32, AR265: 31, AR206: 30, AR089: 29, AR310: 29, AR033: 29, AR096: 27, AR273: 24, AR198: 24, AR213: 23, AR251: 22, AR312: 20, AR060: 19, AR052: 19, AR053: 18, AR309: 18, AR104: 17, AR055: 13, AR186: 11, AR253: 10, AR061: 10, AR248: 8, AR249: 7 L0771: 5, L0794: 5, L0662: 3, L0803: 3, L0790: 3, H0600: 2, L0369: 2, L0763: 2, L0770: 2, L0764: 2, L0766: 2, L0774: 2, L0378: 2, L0789: 2, L0666: 2, L0748: 2, L0750: 2, L0756: 2, L0777: 2, H0650: 1, S0360: 1, L0717: 1, H0052: 1, H0024: 1, H0616: 1, H0059: 1, S0448: 1, L0769: 1, L0800: 1, L0767: 1, L0768: 1, L0649: 1, L0804: 1, L0806: 1, L0657: 1, L0512: 1, L0647: 1, L0664: 1, L0665: 1, S0374: 1, H0666: 1, H0518: 1, H0522: 1, L0745: 1, L0747: 1, L0749: 1, L0596: 1, L0581: 1 and H0136: 1.		
110	HDPPQ30	684292	120	220 - 336	624		H0522: 1		
111	HDPPW82	778405	121	395 - 484	625		H0522: 1		
112	HDPXN20	801896	122	61 - 186	626	Glu-21 to Leu-26, Pro-34 to Ser-41.	H0521: 1		
113	HDQHM36	852328	123	129 - 275	627		AR089: 27, AR060: 10		

							H0521: 2 and H0486: 1.		
114	HDTAU35	838139	124	260 - 313	628		AR060:1023, AR089: 621 H0486: 1		
115	HDTAV54	801898	125	191 - 292	629	Thr-20 to Gly-26.	AR060: 54, AR089: 46 L0751: 13, L0748: 8, L0758: 6, L0750: 5, L0752: 4, L0755: 4, L0757: 4, L0605: 4, L0717: 3, L0761: 3, L0659: 3, S0406: 3, L0740: 3, L0754: 3, L0747: 3, L0731: 3, L0596: 3, S0444: 2, L0770: 2, L0769: 2, L0662: 2, L0768: 2, L0766: 2, L0774: 2, L0775: 2, L0666: 2, H0672: 2, L0744: 2, L0745: 2, L0780: 2, L0753: 2, H0423: 2, H0224: 1, H0225: 1, T0049: 1, L0785: 1, S0116: 1, H0306: 1, S0354: 1, S0360: 1, S6026: 1, H0486: 1, L0477: 1, L0586: 1, S0280: 1, H0036: 1, H0421: 1, H0057: 1, S0051: 1, H0510: 1, S0250: 1, H0030: 1, H0644: 1, S0036: 1, S0438: 1, H0509: 1, S0422: 1, L0520: 1, L0762: 1, L0638: 1, L0772: 1, L0372: 1, L0646: 1, L0764: 1, L0771: 1, L0773: 1, L0648: 1, L0386: 1, L0776: 1, L0783: 1, L0790: 1, S0374: 1, H0682: 1, H0659: 1, H0670: 1, S0330: 1, H0539: 1, S0380: 1, H0704: 1, H0576: 1, L0743: 1, L0759: 1, L0588: 1, L0593: 1, L0361:		

							1, L0366: 1, H0653: 1 and S0242: 1.		
116	HDTFX18	801957	126	164 - 226	630		AR060: 2, AR089: 1 L0748: 2, L0731: 2, H0486: 1, H0634: 1, L0766: 1, L0809: 1, L0750: 1 and L0777: 1.		
117	HDTGW48	827285	127	375 - 464	631		AR060: 1 H0591: 2, L0758: 2, H0585: 1, H0486: 1, H0618: 1, L0794: 1, L0804: 1, H0672: 1 and L0750: 1.		
118	HDTLM18	836057	128	345 - 524	632	Ile-47 to Ser-60.	AR089: 6, AR060: 3 H0486: 1 and L0599: 1.		
119	HE2CA60	770301	129	360 - 383	633		AR089: 31, AR060: 16 L0777: 11, S0422: 8, L0766: 7, H0624: 5, H0170: 5, L0598: 5, L0665: 5, L0662: 4, L0756: 4, L0731: 4, L0758: 4, H0171: 3, L0776: 3, L0744: 3, L0752: 3, S0442: 2, L0717: 2, L0471: 2, H0428: 2, H0063: 2, L0650: 2, L0659: 2, L0666: 2, L0663: 2, S0406: 2, L0439: 2, S0434: 2, L0362: 2, H0685: 1, S0218: 1, H0650: 1, H0402: 1, S0358: 1, S0360: 1, H0722: 1, S0046: 1, S0300: 1, S0222: 1, H0592: 1, H0587: 1, H0486: 1, H0013: 1, L0021: 1, H0037: 1, H0581: 1, H0263: 1, H0050: 1, H0057: 1, L0163: 1, H0328: 1, T0023: 1, H0551: 1, H0100: 1, L0065: 1, S0440: 1, H0649: 1, L0769: 1,		

							L0761: 1, L0667: 1, L0630: 1, L0372: 1, L0764: 1, L0521: 1, L0533: 1, L0775: 1, L0651: 1, L0806: 1, L0655: 1, L0656: 1, S0374: 1, H0547: 1, S0328: 1, H0539: 1, S0004: 1, H0696: 1, L0741: 1, L0740: 1, L0754: 1, L0747: 1, L0750: 1, L0753: 1, L0759: 1, S0031: 1, L0485: 1, S0242: 1, S0458: 1 and H0721: 1.		
120	HE2CA60	888705	130	1731 - 1754	634		AR089: 31, AR060: 16 L0777: 11, S0422: 8, L0766: 7, H0624: 5, H0170: 5, L0598: 5, L0665: 5, L0662: 4, L0756: 4, L0731: 4, L0758: 4, H0171: 3, L0776: 3, L0744: 3, L0752: 3, S0442: 2, L0717: 2, L0471: 2, H0428: 2, H0063: 2, L0650: 2, L0659: 2, L0666: 2, L0663: 2, S0406: 2, L0439: 2, S0434: 2, L0362: 2, H0685: 1, S0218: 1, H0650: 1, H0402: 1, S0358: 1, S0360: 1, H0722: 1, S0046: 1, S0300: 1, S0222: 1, H0592: 1, H0587: 1, H0486: 1, H0013: 1, L0021: 1, H0037: 1, H0581: 1, H0263: 1, H0050: 1, H0057: 1, L0163: 1, H0328: 1, T0023: 1, H0551: 1, H0100: 1, L0065: 1, S0440: 1, H0649: 1, L0769: 1, L0761: 1, L0667: 1, L0630: 1, L0372: 1, L0764: 1,		

							L0521: 1, L0533: 1, L0775: 1, L0651: 1, L0806: 1, L0655: 1, L0656: 1, S0374: 1, H0547: 1, S0328: 1, H0539: 1, S0004: 1, H0696: 1, L0741: 1, L0740: 1, L0754: 1, L0747: 1, L0750: 1, L0753: 1, L0759: 1, S0031: 1, L0485: 1, S0242: 1, S0458: 1 and H0721: 1.		
121	HE2CH58	838140	131	321 - 479	635		H0171: 3, S0376: 1, L0637: 1, L0768: 1, L0805: 1, L0659: 1, L0748: 1, L0759: 1 and L0595: 1.		
122	HE2CM39	553651	132	10 - 51	636		AR089: 22, AR060: 13 L0759: 4, L0657: 3, L0789: 3, L0439: 3, L0752: 3, L0758: 3, S0360: 2, L0805: 2, L0438: 2, L0750: 2, L0777: 2, H0423: 2, H0171: 1, H0638: 1, H0351: 1, H0178: 1, H0606: 1, L0625: 1, L0769: 1, L0771: 1, L0662: 1, L0794: 1, L0803: 1, L0804: 1, L0650: 1, L0774: 1, L0659: 1, L0809: 1, L0663: 1, H0436: 1, L0748: 1, L0740: 1, H0445: 1, L0604: 1 and H0422: 1.		
123	HE2HC60	753265	133	273 - 392	637	Thr-26 to Gln-31.	AR089: 21, AR060: 14 L0439: 13, L0777: 9, L0717: 8, L0748: 6, L0659: 5, L0747: 4, H0318: 3, L0665: 3, L0779: 3, H0170: 2, H0212: 2, L0455: 2, L0764: 2, L0662: 2, L0768: 2, L0766: 2, L0775: 2, L0655: 2, H0520: 2, H0672:		

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124	HE2PO93	771655	134	770 - 898	638		AR089: 11, AR060: 10 L0803: 5, L0731: 5, S0422: 4, H0171: 2, S0408: 2, H0040: 2, L0766: 2, L0666: 2, H0144: 2, H0648: 2, L0748: 2, L0439: 2, L0754: 2, L0779: 2, H0170: 1, S0114: 1, H0657: 1, S0354: 1, S0360: 1, H0580: 1, H0741: 1, L0717: 1, H0411: 1, H0431: 1, H0586: 1, H0052: 1, H0596: 1, H0014: 1, S0388: 1, S0051: 1, S0003: 1, H0591: 1, T0042:		

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125	HE6AU52	562782	135	41 - 166	639	Gln-17 to Arg-24.	H0008: 1		
126	HE6CS65	762960	136	295 - 483	640	Trp-50 to Leu-55.	AR089: 36, AR060: 21 L0777: 16, L0748: 12, L0757: 11, L0776: 8, L0439: 7, H0692: 6, H0046: 6, L0769: 5, L0666: 5, S0242: 5, L0770: 4, L0771: 4, L0438: 4, L0743: 4, L0754: 4, L0749: 4, L0758: 4, S0444: 3, H0051: 3, L0662: 3, L0766: 3, S0378: 3, L0751: 3, L0747: 3, S0436: 3, S0212: 2, H0637: 2, H0497: 2, H0545: 2, H0050: 2, H0031: 2, H0090: 2, H0100: 2, L0768: 2, L0561: 2, L0774: 2, L0775: 2, L0657: 2, H0670: 2, S3014: 2, L0744: 2, L0752: 2, L0581: 2, H0624: 1, H0170: 1, H0713: 1, H0717: 1, S6024: 1, T0049: 1, H0255: 1, S0356: 1, S0442: 1, S0358: 1, S0376: 1, S0360: 1, H0619: 1, L0717: 1,		

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127	HE6DO92	562767	137	38 - 115	641		AR060: 6, AR089: 3 H0265: 1 and H0100: 1.		
128	HE6EY13	847058	138	171 - 311	642	Thr-32 to Leu-37.	AR089: 22, AR060: 17 L0748: 10, L0750: 6, H0181: 5, H0265: 4, S0007: 4, H0545: 4, H0542: 4, H0543: 4, H0657: 3, H0662: 3, S0474: 3, H0135: 3, H0040: 3, H0087: 3, H0494: 3, S0142: 3, L0764: 3, S0126: 3, L0751: 3, L0754: 3, L0731: 3, L0757: 3, L0758: 3, H0638: 2, H0441: 2, H0618: 2, H0581: 2,		

							S0049: 2, H0086: 2, L0471: 2, L0163: 2, H0428: 2, H0617: 2, H0124: 2, H0163: 2, H0100: 2, S0344: 2, S0002: 2, L0775: 2, H0670: 2, L0602: 2, L0743: 2, L0744: 2, L0747: 2, L0759: 2, S0434: 2, S0276: 2, H0506: 2, H0352: 2, H0556: 1, T0002: 1, S0402: 1, H0583: 1, H0656: 1, S0212: 1, S0110: 1, H0484: 1, H0255: 1, H0306: 1, S0418: 1, S0356: 1, S0358: 1, S0376: 1, S0360: 1, H0637: 1, S0132: 1, H0393: 1, L0717: 1, S0278: 1, H0549: 1, H0574: 1, L0623: 1, H0427: 1, L0021: 1, H0002: 1, H0123: 1, H0011: 1, H0012: 1, H0620: 1, H0015: 1, H0083: 1, H0188: 1, H0615: 1, H0039: 1, H0606: 1, H0551: 1, T0067: 1, H0487: 1, H0412: 1, H0509: 1, H0654: 1, S0144: 1, H0529: 1, L0770: 1, L0769: 1, L0667: 1, L0772: 1, L0644: 1, L0773: 1, L0662: 1, L0767: 1, L0768: 1, L0766: 1, L0803: 1, L0657: 1, L0659: 1, L0518: 1, L0809: 1, L0544: 1, L0368: 1, L0790: 1, L0791: 1, L0666: 1, H0144: 1, S0374: 1, L0438: 1, H0520: 1, H0547: 1, H0658: 1, H0660: 1, H0672: 1, S0328: 1,		

							H0539: 1, S0378: 1, S0380: 1, H0521: 1, S0406: 1, H0555: 1, H0478: 1, S3014: 1, S0027: 1, L0439: 1, L0780: 1, L0752: 1, L0755: 1, H0444: 1, H0445: 1, L0591: 1, L0362: 1, L0361: 1, H0668: 1, S0026: 1, S0242: 1, H0423: 1, H0422: 1 and S0456: 1.		
129	HE6FU11	827236	139	145 - 825	643		AR089: 7, AR060: 5, AR202: 4, AR250: 3, AR033: 2, AR248: 2, AR310: 2, AR265: 2, AR096: 2, AR263: 2, AR271: 2, AR272: 2, AR061: 2, AR055: 1, AR206: 1, AR204: 1, AR308: 1, AR253: 1, AR053: 1, AR311: 1, AR205: 1, AR243: 1, AR312: 1, AR251: 1 L0759: 2, H0706: 1, H0123: 1, H0024: 1, H0100: 1, L0794: 1 and L0789: 1.		
130	HE6FV29	588454	140	210 - 311	644		AR271: 33, AR244: 29, AR243: 28, AR089: 27, AR273: 25, AR205: 24, AR206: 22, AR198: 19, AR039: 19, AR246: 17, AR204: 16, AR194: 15, AR186: 14, AR060: 14, AR251: 10, AR061: 10, AR202: 9, AR055: 8, AR312: 8, AR249: 7, AR310: 7, AR052: 7, AR033: 7, AR265: 7, AR309: 7, AR248: 5,		

							AR053: 5, AR253: 5, AR096: 5, AR213: 4, AR104: 3, AR263: 2 S0440: 28, S0476: 19, H0494: 19, S0372: 16, L0754: 16, S0132: 12, H0046: 12, L0666: 12, H0586: 11, S0330: 11, S0328: 10, S0360: 9, H0587: 9, L0747: 9, H0622: 8, S0436: 8, H0648: 7, S0356: 6, S0003: 6, H0674: 6, L0806: 5, L0362: 5, L0601: 5, S0358: 4, S0214: 4, H0039: 4, H0031: 4, H0264: 4, L0763: 4, L0662: 4, L0776: 4, L0777: 4, L0752: 4, S0430: 3, S0376: 3, H0370: 3, H0600: 3, H0592: 3, H0644: 3, H0551: 3, H0560: 3, L0637: 3, L0646: 3, L0649: 3, L0653: 3, L0659: 3, L0663: 3, H0696: 3, S3014: 3, S0434: 3, L0591: 3, H0662: 2, S0410: 2, H0393: 2, H0596: 2, H0597: 2, L0483: 2, H0553: 2, H0032: 2, H0169: 2, H0598: 2, H0090: 2, H0379: 2, L0372: 2, L0376: 2, L0517: 2, L0783: 2, L0809: 2, L0665: 2, H0547: 2, H0658: 2, H0670: 2, S0380: 2, S0152: 2, S0406: 2, S0027: 2, L0744: 2, L0779: 2, L0755: 2, L0599: 2, S0196: 2, H0170: 1, H0171: 1, H0556: 1, T0002: 1,		

							S0134: 1, H0483: 1, H0663: 1, L0005: 1, S0442: 1, S0354: 1, S0444: 1, S0408: 1, T0008: 1, L0717: 1, H0411: 1, H0549: 1, T0039: 1, H0013: 1, L0021: 1, H0349: 1, S0010: 1, S0049: 1, H0251: 1, H0204: 1, L0738: 1, H0012: 1, H0015: 1, H0373: 1, H0355: 1, H0510: 1, H0615: 1, H0688: 1, L0142: 1, L0143: 1, H0166: 1, H0673: 1, H0591: 1, H0038: 1, H0040: 1, H0634: 1, T0067: 1, H0380: 1, H0272: 1, H0487: 1, H0412: 1, H0623: 1, H0059: 1, H0100: 1, S0352: 1, S0382: 1, S0448: 1, S0306: 1, S0438: 1, L0640: 1, L0770: 1, L0761: 1, L0764: 1, L0771: 1, L0648: 1, L0794: 1, L0549: 1, L5564: 1, L0551: 1, L0805: 1, L0518: 1, L0382: 1, L0519: 1, L0789: 1, L0664: 1, H0144: 1, H0520: 1, S0126: 1, H0711: 1, H0435: 1, H0659: 1, H0666: 1, S0350: 1, S0044: 1, H0555: 1, S0322: 1, L0748: 1, L0740: 1, L0745: 1, L0749: 1, L0756: 1, L0780: 1, L0757: 1, L0759: 1, S0242: 1 and S0456: 1.		
131	HE8FC45	843781	141	155 - 298	645		AR089: 28, AR060: 14 H0556: 2, L0534: 2, L0562: 2, L0539: 2, L0109:		

							2, L0365: 2, H0619: 1, S0222: 1, H0587: 1, H0013: 1, H0635: 1, H0615: 1, H0124: 1, H0477: 1, H0264: 1, T0042: 1, S0426: 1, L0766: 1, L0379: 1, S0053: 1, L0758: 1 and H0543: 1.		
132	HE8FC45	845672	142	155 - 298	646		AR089: 28, AR060: 14 H0556: 2, L0534: 2, L0562: 2, L0539: 2, L0109: 2, L0365: 2, H0619: 1, S0222: 1, H0587: 1, H0013: 1, H0635: 1, H0615: 1, H0124: 1, H0477: 1, H0264: 1, T0042: 1, S0426: 1, L0766: 1, L0379: 1, S0053: 1, L0758: 1 and H0543: 1.		
133	HE8FD92	888274	143	157 - 288	647		AR060: 6, AR089: 4 H0457: 10, L0659: 9, L0748: 8, L0439: 7, L0747: 7, L0666: 6, L0663: 6, L0758: 6, L0759: 6, L0717: 5, L0005: 4, L0777: 4, H0423: 4, H0013: 3, H0622: 3, L0637: 3, L0662: 3, L0768: 3, L0375: 3, L0655: 3, L0661: 3, H0170: 2, H0171: 2, H0716: 2, H0650: 2, H0661: 2, S0444: 2, S0360: 2, S0007: 2, H0351: 2, H0586: 2, S0414: 2, H0486: 2, H0427: 2, H0251: 2, H0178: 2, L0471: 2, H0014: 2, H0163: 2, H0038: 2, H0059: 2, S0422: 2, L0638: 2, L0761: 2, L0766: 2, L0649: 2, L0650: 2, L0775: 2, L0776: 2, L0657:		

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134	HE8FD92	843825	144	1074 - 1205	648		AR060: 6, AR089: 4 H0457: 10, L0659: 9, L0748: 8, L0439: 7, L0747: 7, L0666: 6, L0663: 6, L0758: 6, L0759: 6, L0717: 5, L0005: 4, L0777: 4, H0423: 4, H0013: 3, H0622: 3, L0637: 3, L0662: 3, L0768: 3, L0375: 3, L0655: 3, L0661: 3, H0170: 2, H0171: 2, H0716: 2, H0650: 2, H0661: 2, S0444: 2, S0360: 2, S0007: 2, H0351: 2, H0586: 2, S0414: 2, H0486: 2, H0427: 2, H0251: 2, H0178: 2, L0471: 2, H0014: 2, H0163: 2, H0038: 2, H0059: 2, S0422: 2, L0638: 2, L0761: 2, L0766: 2, L0649: 2, L0650: 2, L0775: 2, L0776: 2, L0657: 2, L0517: 2, L0665: 2, H0144: 2, H0690: 2, H0648: 2, S0152: 2, H0696: 2, H0436: 2, L0750: 2, L0731: 2, H0685: 1, S0114: 1, H0583: 1, H0657: 1, S0029: 1, S0358: 1, S0376: 1, S0408: 1, H0619: 1, H0261: 1, S0222: 1, H0587: 1, H0333: 1, S0280: 1, L0021: 1, H0098: 1, S0010: 1, H0052: 1, H0150: 1, H0172: 1, H0024: 1, T0010: 1, H0266: 1, S0003: 1, H0428: 1, H0070: 1, L0483: 1, H0030: 1, H0032: 1, H0316: 1, S0036: 1, H0090: 1,		

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135	HE8FD92	856544	145	2 - 1414	649	Asp-11 to Tyr-16.	AR060: 6, AR089: 4 H0457: 10, L0659: 9, L0748: 8, L0439: 7, L0747: 7, L0666: 6, L0663: 6, L0758: 6, L0759: 6, L0717: 5, L0005: 4, L0777: 4, H0423: 4, H0013: 3, H0622: 3, L0637: 3, L0662: 3, L0768: 3, L0375: 3, L0655: 3, L0661: 3, H0170: 2, H0171: 2, H0716: 2, H0650: 2, H0661: 2, S0444: 2, S0360: 2, S0007: 2, H0351: 2, H0586: 2, S0414: 2, H0486: 2, H0427: 2, H0251: 2, H0178: 2, L0471: 2, H0014: 2, H0163: 2, H0038:		

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136	HE8FD92	869847	146	2268 - 2399	650		AR060: 6, AR089: 4 H0457: 10, L0659: 9, L0748: 8, L0439: 7, L0747: 7, L0666: 6, L0663: 6, L0758: 6, L0759: 6, L0717: 5, L0005: 4, L0777: 4, H0423: 4, H0013: 3, H0622: 3, L0637: 3, L0662: 3, L0768: 3, L0375: 3, L0655: 3, L0661: 3, H0170: 2, H0171: 2, H0716: 2, H0650: 2, H0661: 2, S0444: 2, S0360: 2, S0007: 2, H0351: 2, H0586: 2, S0414: 2, H0486: 2, H0427: 2, H0251: 2, H0178: 2, L0471: 2, H0014: 2, H0163: 2, H0038: 2, H0059: 2, S0422: 2, L0638: 2, L0761: 2, L0766: 2, L0649: 2, L0650: 2, L0775: 2, L0776: 2, L0657: 2, L0517: 2, L0665: 2, H0144: 2, H0690: 2, H0648: 2, S0152: 2, H0696: 2, H0436: 2, L0750: 2, L0731: 2, H0685: 1, S0114: 1, H0583: 1, H0657: 1, S0029: 1, S0358: 1, S0376: 1, S0408: 1, H0619: 1, H0261: 1, S0222: 1, H0587: 1, H0333: 1, S0280: 1, L0021: 1, H0098: 1, S0010: 1, H0052: 1, H0150: 1, H0172: 1, H0024: 1, T0010: 1,		

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137	HE8FD92	901142	147	2141 - 2272	651		AR060: 6, AR089: 4 H0457: 10, L0659: 9, L0748: 8, L0439: 7, L0747: 7, L0666: 6, L0663: 6, L0758: 6, L0759: 6, L0717: 5, L0005: 4, L0777: 4, H0423: 4, H0013: 3, H0622: 3, L0637: 3, L0662: 3, L0768: 3, L0375: 3, L0655: 3, L0661: 3, H0170: 2, H0171: 2, H0716: 2, H0650: 2, H0661: 2, S0444: 2, S0360: 2, S0007: 2, H0351:		

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138	HE8SG96	862016	148	118 - 192	652	Tyr-16 to Gln-23.	AR052: 43, AR248: 40, AR249: 35, AR253: 33, AR096: 31, AR312: 30, AR053: 28, AR265: 24, AR213: 24, AR310: 23, AR263: 21, AR309: 20, AR251: 13, AR089: 10, AR055: 9, AR033: 8, AR212: 7, AR061: 6, AR197: 6, AR250: 6, AR264: 6, AR207: 5, AR308: 5, AR245: 5, AR060: 5, AR311: 4, AR039: 4, AR201: 4, AR254: 3, AR272: 3, AR204: 3, AR186: 2, AR271: 2, AR104: 2, AR205: 2, AR198: 2, AR243: 2 H0244: 1, S0126: 1 and L0366: 1.		
139	HE8TY46	899528	149	1413 - 1976	653		AR060: 6, AR089: 6, AR265: 5, AR251: 4, AR061: 4, AR309: 4, AR033: 4, AR096: 4, AR244: 3, AR310: 3, AR253: 3, AR213: 2, AR312: 2, AR186: 2, AR055: 2, AR271: 1, AR052: 1, AR039: 1		

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140	HE9CY05	834826	150	55 - 762	654	Ser-18 to Glu-24, Leu-121 to Asp-134, Pro-142 to Ala-154, Cys-185 to Val-203.	L0748: 8, L0749: 3, L0471: 2 and H0144: 1.		
141	HE9EA10	827796	151	212 - 448	655	Arg-6 to Trp-11.	L0794: 12, H0620: 3, L0756: 2, L0759: 2, S0408:		

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142	HE9GG20	633719	152	319 - 348	656		AR089: 11, AR060: 9 L0748: 6, H0144: 3, S0010: 2, L0439: 2, L0749: 2, H0717: 1, H0662: 1, S6022: 1, S0222: 1, S0280: 1, L0109: 1, H0163: 1, L0639: 1, L0659: 1, L0744: 1, L0745: 1, L0747: 1, L0756: 1, L0596: 1 and S0276: 1.		
143	HEBCI18	831464	153	855 - 1064	657	Val-40 to Cys-45, Lys-58 to Thr-64.	AR060: 7, AR089: 4 S0418: 4, L0438: 4, L0599: 4, L0741: 3, H0581: 2, S0422: 2, L0770: 2, L0659: 2, H0520: 2, H0547: 2, L0439: 2, L0754: 2, L0747: 2, L0779: 2, S0007: 1, S0010: 1, S0049: 1, H0673: 1, H0494: 1, H0625: 1, L0769: 1, L0645: 1, L0662: 1, L0794: 1, L0766: 1, L0775: 1, L0789: 1, L0666: 1, L0663: 1, S0374: 1, S0436: 1, L0593: 1, L0366: 1 and S0196: 1.		
144	HEBCY54	600355	154	172 - 528	658	Arg-18 to Lys-26, Gly-35 to Ala-42, Gln-61 to Gly-67.	AR060: 4, AR089: 2 L0438: 3, T0010: 2, L0351: 2, L0748: 2, L0747: 2, S0116: 1, S0354: 1, S0007: 1, H0619: 1, H0135: 1, L0521: 1, L0774: 1, L0809: 1, H0521: 1, L0439: 1, L0755: 1, L0758: 1 and		

							H0445: 1.		
145	HEBDF77	692347	155	681 - 791	659		AR213: 5, AR060: 4, AR254: 3, AR089: 3, AR207: 3, AR205: 2, AR243: 2, AR197: 2, AR309: 1, AR096: 1, AR264: 1, AR104: 1 L0438: 5, L0439: 5, L0759: 2, L0005: 1, S0007: 1, H0351: 1, S0346: 1, L0157: 1, L0351: 1, L0769: 1, L0794: 1, L0776: 1, L0741: 1, L0756: 1, L0608: 1 and L0366: 1.		
146	HEBDQ91	840288	156	1211 - 1336	660		AR060: 9, AR089: 7 S0007: 5, L0805: 2, S6026: 1, L0769: 1, L0438: 1, L0741: 1, L0748: 1 and L0758: 1.		
147	HEBFR46	847064	157	200 - 289	661	Met-1 to Thr-6.	AR089: 29, AR060: 15 H0457: 10, H0550: 5, H0436: 5, H0549: 4, H0616: 4, H0556: 3, H0580: 3, S0007: 3, H0521: 3, L0747: 3, H0295: 2, T0040: 2, L0809: 2, L0789: 2, H0658: 2, L0731: 2, L0596: 2, H0543: 2, S0040: 1, S0282: 1, H0662: 1, H0402: 1, H0125: 1, L0534: 1, L0562: 1, S0356: 1, S0358: 1, S0046: 1, H0559: 1, H0069: 1, H0599: 1, H0618: 1, H0318: 1, H0581: 1, H0546: 1, H0123: 1, H0083: 1, H0266: 1, H0687: 1, H0284: 1, H0124: 1, H0038: 1, H0551: 1, H0623: 1, S0038:		

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148	HEBGE07	798096	158	106 - 234	662		S0007: 1		
149	HEGAU15	834379	159	59 - 163	663		AR060: 7, AR089: 5 H0550: 2, L0749: 2, H0483: 1, H0318: 1 and H0555: 1.		
150	HELAT35	693175	160	215 - 277	664		AR089: 10, AR060: 6 S0045: 1 and H0100: 1.		
151	HELBU54	637624	161	82 - 135	665		AR089: 15, AR060: 9 L0748: 3, S0045: 1 and L0749: 1.		
152	HELGG84	674456	162	147 - 215	666		AR060: 4, AR089: 3 L0750: 5, S0045: 2, S0212: 1, S0300: 1, S0010: 1, H0505: 1, S0049: 1, H0266: 1, L0598: 1, L0662: 1, L0809: 1, S0374: 1, H0696: 1 and L0758: 1.		
153	HELGG84	851137	163	147 - 215	667		AR060: 4, AR089: 3 L0750: 5, S0045: 2, S0212: 1, S0300: 1, S0010: 1, H0505: 1, S0049: 1, H0266: 1, L0598: 1, L0662: 1, L0809: 1, S0374: 1, H0696: 1 and L0758: 1.		
154	HEMEY47	834491	164	440 - 472	668		AR089: 35, AR060: 16 L0717: 2, L0527: 2, S0046: 1, L0646: 1, L0748: 1, L0750: 1 and L0581: 1.		
155	HEOMC46	866171	165	154 - 309	669	Ser-5 to Thr-10, Cys-36 to Glu-51.	AR089: 23, AR060: 13 H0581: 2, H0457: 2 and S0116: 1.		

156	HEPBA14	855935	166	664 - 711	670		AR052: 194, AR053: 169, AR245: 151, AR212: 140, AR205: 138, AR213: 131, AR253: 125, AR312: 124, AR273: 117, AR254: 115, AR248: 107, AR250: 104, AR309: 102, AR308: 99, AR249: 97, AR243: 94, AR104: 91, AR186: 90, AR272: 88, AR033: 88, AR310: 81, AR096: 75, AR264: 75, AR246: 73, AR201: 71, AR206: 71, AR265: 69, AR197: 68, AR202: 62, AR244: 62, AR271: 62, AR207: 57, AR039: 56, AR089: 54, AR311: 54, AR198: 50, AR252: 50, AR251: 48, AR263: 47, AR060: 44, AR194: 39, AR061: 37, AR204: 34, AR055: 20 H0150: 1		
157	HEQAH80	701984	167	150 - 248	671		AR060: 3, AR089: 2 S0358: 4, H0544: 2, H0551: 2, S0002: 2, H0672: 2, L0755: 2, S0376: 1, H0635: 1, L0022: 1, H0042: 1, H0575: 1, H0545: 1, H0266: 1, H0644: 1, H0591: 1, H0488: 1, S0344: 1, L0771: 1, L0803: 1, L0804: 1, S0053: 1, H0547: 1, H0435: 1, H0696: 1, S0406: 1, L0751: 1, L0757: 1, S0434: 1, L0591: 1 and S0458: 1.		
158	HEQBF89	786205	168	306 - 458	672	Glu-17 to Gly-22,	AR089: 46, AR060: 21		

						Arg-29 to Phe-36.	H0544: 1		
159	HETCI16	844543	169	237 - 359	673	Met-1 to Trp-9.	AR060: 18, AR089: 17 H0046: 6, L0747: 6, L0756: 6, L0740: 5, L0662: 4, L0803: 4, L0748: 4, S0360: 3, H0620: 3, H0014: 3, H0674: 3, L0774: 3, L0439: 3, H0431: 2, L0761: 2, L0794: 2, L0663: 2, H0659: 2, L0751: 2, L0779: 2, L0596: 2, L0588: 2, T0049: 1, S0376: 1, S0444: 1, S0408: 1, S0468: 1, S0045: 1, H0645: 1, H0549: 1, H0550: 1, T0109: 1, H0013: 1, H0156: 1, H0599: 1, H0575: 1, T0048: 1, H0196: 1, H0597: 1, H0544: 1, H0050: 1, H0510: 1, H0288: 1, H0292: 1, H0039: 1, H0135: 1, H0616: 1, S0016: 1, L0640: 1, L0770: 1, L0637: 1, L0388: 1, L0805: 1, L0776: 1, L0659: 1, L0809: 1, L0790: 1, L0792: 1, L0666: 1, L0664: 1, H0144: 1, L0438: 1, H0547: 1, H0519: 1, H0689: 1, H0672: 1, S0328: 1, H0521: 1, H0627: 1, S3014: 1, S0028: 1, L0780: 1, L0757: 1, L0758: 1, S0026: 1 and H0506: 1.		
160	HETDW58	790557	170	541 - 609	674		AR089: 31, AR060: 24 L0731: 15, L0439: 10, L0752: 6, L0766: 5, L0779: 5, H0046: 4, H0494: 4, L0770: 4, L0774: 4, H0013:		

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161	HETEY67	704077	171	292 - 492	675		AR060: 3, AR089: 3 H0046: 21, L0803: 4, L0790: 2, L0750: 2, L0777: 2, L0758: 2, L0362: 2, S0280: 1, L0769: 1, L0794: 1, L0774: 1, L0809: 1 and L0666: 1.		
162	HFCDW95	847383	172	151 - 159	676		L0766: 9, H0521: 7, L0731: 7, H0341: 6, L0770: 6, L0771: 6, L0803: 6, L0754: 6, L0752: 6, S0354: 5, L0662: 5, H0519: 5, L0439: 5, L0779: 5, L0758: 5, S0436: 5, H0009: 4, H0673: 4, S0422: 4, L0521: 4, L0659: 4, L0438: 4, S0028: 4, L0485: 4, L0601: 4, H0657: 3, H0638: 3, S0418: 3, S0007: 3, S0222: 3, S0214: 3, H0529: 3, L0369: 3, L0794: 3, L0649: 3, L0805: 3, L0776: 3, L0809: 3, L0665: 3, H0144: 3, H0670: 3, S0406: 3, L0756: 3, L0755: 3, L0759: 3, H0667: 3, S0420: 2, S0358: 2, S0360: 2, H0580: 2, H0729: 2, H0733: 2, S0476: 2, H0645: 2, S6026: 2, S0300: 2, H0427: 2, H0156: 2, S0010: 2, H0085:		

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163	HFCEI04	692438	173	136 - 264	677	Asn-21 to Gly-28.	AR060: 7, AR089: 5 H0009: 3		
164	HFCFD04	824057	174	170 - 217	678	Phe-2 to Trp-7.	AR089: 93, AR060: 55 L0747: 43, L0666: 20, L0752: 19, L0663: 18, L0439: 18, L0750: 17, L0731: 17, L0664: 13, L0665: 13, L0438: 13, L0748: 13, L0758: 13, L0662: 10, L0777: 10, L0659: 9, L0757: 9, L0775: 8, H0520: 8, H0547: 8, L0751: 8, S0436: 8, S0358:		

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165	HFCFE20	701985	175	216 - 272	679		H0251: 9, S0136: 8, S0422: 7, L0747: 7, L0803: 6, L0439: 6, L0766: 5, H0144: 5, H0547: 5, L0731: 5, H0497: 4, H0622: 4, H0551: 4, H0264: 4, H0529: 4, S3014: 4, L0779: 4, L0755: 4, H0170: 3, S0444: 3, H0431: 3, S0150: 3, H0538: 3, L0662: 3, L0663: 3, L0777: 3, L0591: 3, H0423: 3, S0040: 2, H0717: 2, S0358: 2, H0580: 2, S0132: 2, H0550: 2, H0586: 2, H0427: 2, H0036: 2, S0010: 2, H0581: 2, H0052: 2, H0263: 2, H0457: 2, L0471: 2, T0010: 2, H0615: 2, L0483: 2, H0674: 2, H0494: 2, H0560: 2, S0438: 2, H0641: 2, L0598: 2, L0763: 2, L0638: 2, L0761: 2, L0646: 2, L0771: 2, L0794: 2, L0805: 2, L0659: 2, L0666: 2, L0665: 2, S0406: 2, H0436: 2, L0754: 2, L0756: 2, L0758: 2, L0759: 2, S0260: 2, L0588: 2, L0589: 2, L0581: 2, L0599: 2, L0604: 2, H0136: 2, H0542: 2, H0624: 1, H0224: 1, H0738: 1, S0218: 1, L0002: 1, H0583: 1, H0656: 1, L0470: 1, S0116: 1, S0212: 1, H0661: 1, H0663: 1, H0305: 1, H0450: 1, H0638: 1, S0420: 1, S0356: 1, S0354: 1, S0376: 1,		

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166	HFEAY59	658685	176	154 - 276	680	Arg-2 to Lys-8, Arg-22 to Lys-31.	AR060: 4, AR089: 2 H0081: 2 and H0586: 1.		
167	HFGAJ16	580824	177	40 - 135	681		L0747: 17, H0617: 14, L0740: 11, L0750: 9, L0752: 9, S0360: 8, L0751: 8, H0265: 7, S0344: 7, L0748: 7, H0545: 6, L0438: 6, H0539: 6, L0757: 6, L0591: 6, S0278: 5, H0618: 5, H0081: 5, S0142: 5, L0662: 5, L0766: 5, L0665: 5, S0406: 5, L0742: 5, L0758: 5, H0713: 4, H0717: 4, H0551: 4, S0440: 4, S0144: 4, S0002: 4, L0769: 4, L0768: 4, L0659: 4, L0783: 4, L0809: 4, H0670: 4, H0521: 4, S0418: 3, S0410: 3, S0045: 3, S0046: 3, S0474: 3, H0052: 3, H0083: 3, H0494: 3, L0640: 3, L0775: 3, L0776: 3, L0532: 3, L0663: 3, L0741: 3, L0743: 3, L0744: 3, L0439: 3, L0753: 3, H0716: 2, S0134: 2, H0650: 2, H0483: 2, H0255: 2, H0663: 2, S0356: 2, S0444: 2, S0476: 2, H0431: 2, H0333: 2, S0346: 2, H0546: 2, H0046: 2, H0510: 2, H0424: 2,		

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168	HFIHZ75	827872	178	700 - 855	682	Pro-31 to Pro-36, Ser-39 to Ile-49.	AR089: 16, AR060: 10 H0251: 8, L0754: 8, L0748: 7, L0742: 6, L0439: 6, H0013: 5, L0664: 5, L0740: 5, S0360: 4, S0140: 4, H0616: 4, H0658: 4, L0602: 4, L0751: 4, L0747: 4, L0752: 4, L0759: 4, H0255: 3, S0132: 3, H0031: 3, H0553: 3, L0770: 3, L0665: 3, H0144: 3, H0520: 3, H0670: 3, S0206: 3, L0605: 3, S0114: 2, S0222: 2, H0455: 2, H0052: 2, H0150: 2, H0644: 2, S0426:		

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169	HFIJA29	839206	179	175 - 423	683	Ser-36 to Ser-42,	AR263: 10, AR251: 5,		

						Lys-54 to Ser-69.	AR052: 4, AR198: 4, AR204: 4, AR312: 4, AR053: 3, AR309: 3, AR089: 3, AR096: 2, AR248: 2, AR213: 2, AR202: 2, AR186: 2, AR246: 2, AR104: 2, AR253: 2, AR060: 1, AR033: 1, AR244: 1, AR271: 1 L0754: 6, L0803: 4, L0749: 4, L0766: 3, L0789: 2, L0438: 2, L0740: 2, S0214: 1, L0055: 1, L0794: 1, L0804: 1, L0655: 1, L0531: 1, L0809: 1, H0689: 1, S0378: 1, L0748: 1, S0194: 1, H0422: 1 and S0424: 1.		
170	HFIJA68	847074	180	283 - 414	684		AR089: 24, AR198: 24, AR204: 18, AR039: 17, AR271: 14, AR096: 13, AR243: 12, AR194: 12, AR273: 10, AR312: 9, AR104: 9, AR205: 8, AR060: 7, AR265: 7, AR053: 7, AR186: 7, AR052: 7, AR249: 6, AR202: 6, AR033: 6, AR246: 6, AR213: 5, AR206: 4, AR309: 4, AR253: 4, AR310: 4, AR251: 4, AR248: 3, AR055: 2, AR263: 2, AR061: 2, AR244: 2 H0305: 3, S0126: 3, H0040: 2, H0412: 2, L0521: 2, S0330: 2, L0747: 2, H0667: 2, S0376: 1, H0574:		

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171	HFKES05	827572	181	243 - 371	685	Ile-26 to Ala-42.	L0777: 7, S0358: 5, L0439: 5, L0751: 5, H0135: 4, H0265: 3, H0556: 3, L0770: 3, L0769: 3, L0662: 3, L0731: 3, H0305: 2, H0546: 2, H0083: 2, L0142: 2, S0208: 2, S0002: 2, L0768: 2, L0663: 2, L0665: 2, H0521: 2, L0741: 2, L0747: 2, L0779: 2, H0543: 2, H0149: 1, H0657: 1, S0116: 1, S0001: 1, H0663: 1, S0356: 1, S0354: 1, H0580: 1, S0045: 1, H0549: 1, S6014: 1, H0309: 1, H0085: 1, H0234: 1, H0597: 1, H0544: 1, H0123: 1, H0012: 1, H0024: 1, H0356: 1, H0594: 1, T0006: 1, H0424: 1, H0644: 1, H0182: 1, H0617: 1, L0055: 1, H0673: 1, H0169: 1, H0038: 1, H0040: 1, H0100: 1, L0351: 1, T0041: 1, H0561: 1, H0132: 1, L0763: 1, L0638: 1, L0637: 1, L0372: 1, L0765: 1, L0648: 1, L0649: 1, L0774: 1, L0375: 1, L0807: 1, L0545: 1, L0529:		

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172	HFKEU12	634006	182	6 - 173	686	Pro-18 to Thr-55.	AR060: 7, AR089: 4 H0012: 2		
173	HFPCZ55	840840	183	676 - 810	687		L0756: 6, L0439: 4, L0777: 4, L0662: 3, H0672: 3, S0358: 2, L0659: 2, L0666: 2, S0031: 2, S0360: 1, H0411: 1, H0369: 1, S0222: 1, S0220: 1, S0005: 1, H0575: 1, T0082: 1, H0050: 1, S6028: 1, H0169: 1, H0100: 1, L0769: 1, L0774: 1, L0776: 1, L0647: 1, L0663: 1, H0660: 1, H0651: 1, S0146: 1, L0743: 1, L0757: 1, L0361: 1 and L0462: 1.		
174	HFPDR62	839400	184	414 - 521	688		S0222: 2, S0114: 1, H0305: 1, H0449: 1 and T0039: 1.		
175	HFPDS07	821646	185	2546 - 2623	689		AR060: 37, AR089: 7 L0803: 19, L0439: 13, L0766: 5, L0804: 5, L0659: 4, L0751: 4, H0422: 4, S0222: 3, H0052: 3, H0622: 3, H0090: 3, L0774: 3, H0144: 3, H0656: 2, S0360: 2, H0486: 2, H0575: 2, L0775: 2, L0607: 2, L0790: 2, L0438: 2, S0126: 2, L0740: 2, L0752: 2, L0757: 2, L0758: 2, L0759: 2, S0418: 1, H0580: 1, H0590:		

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176	HFRAB10	745380	186	203 - 340	690	Thr-26 to Ala-31.	AR060: 7, AR089: 5 L0439: 14, L0438: 6, L0794: 4, L0770: 3, S0222: 2, H0271: 2, L0776: 2, L0756: 2, L0758: 2, S0001: 1, S0278: 1, H0441: 1, S0010: 1, H0052: 1, S0050: 1, S0366: 1, T0042: 1, L0662: 1, S0428: 1, L0352: 1, H0547: 1 and L0780: 1.		
177	HFTBM38	638338	187	577 - 669	691		AR089: 4, AR060: 3 L0439: 14, H0052: 9, L0770: 3, H0544: 2, L0769: 2, L0438: 2, H0593: 2, L0742: 2, L0779: 2, L0758: 2, S0040: 1, H0581: 1, H0009: 1, H0567: 1, H0566: 1, H0123: 1, H0266: 1, H0687: 1, H0433: 1, H0100:		

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178	HFTDH56	862021	188	67 - 99	692		AR060: 10, AR089: 5 H0585: 13, L0750: 10, L0754: 7, L0777: 7, H0135: 6, L0747: 5, L0731: 5, H0617: 4, L0794: 4, L0803: 4, L0758: 4, L0759: 4, H0141: 3, H0046: 3, H0050: 3, H0620: 3, H0494: 3, L0770: 3, L0766: 3, L0775: 3, L0783: 3, H0539: 3, L0749: 3, H0550: 2, T0039: 2, H0013: 2, H0052: 2, H0039: 2, L0764: 2, L0809: 2, L0438: 2, H0547: 2, L0748: 2, L0755: 2, L0588: 2, L0605: 2, H0624: 1, H0584: 1, H0657: 1, H0341: 1, S0001: 1, H0484: 1, H0483: 1, H0637: 1, H0208: 1, S0045: 1, H0619: 1, H0393: 1, S0278: 1, H0069: 1, H0635: 1, H0618: 1, H0253: 1, H0581: 1, H0234: 1, H0123: 1, H0012: 1, H0024: 1, H0014: 1, S0388: 1, T0010: 1, H0594: 1,		

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179	HFVGK35	731868	189	14 - 31	693		AR089: 23, AR060: 12 S0040: 2, L0766: 2, L0665: 2, L0731: 2, L0758: 2, S0376: 1, H0393: 1, H0411: 1, H0333: 1, L0021: 1, H0373: 1, H0688: 1, L0142: 1, H0087: 1, H0551: 1, H0264: 1, H0494: 1, L0520: 1, L0769: 1, L0803: 1, L0664: 1, H0521: 1, H0436: 1, L0748: 1, L0747: 1, L0779: 1, L0759: 1 and H0217: 1.		
180	HFVHW43	570948	190	92 - 211	694		H0393: 1		
181	HFXAV37	626595	191	163 - 273	695		AR089: 5, AR060: 3 S0002: 2, S0134: 1, S0001: 1 and L0589: 1.		
182	HFXBN86	866174	192	149 - 346	696	Gly-60 to Asp-65.	AR253: 9, AR252: 5, AR250: 4, AR060: 3, AR272: 3, AR264: 3, AR053: 2, AR254: 2, AR311: 2, AR263: 2, AR089: 2, AR201: 2, AR061: 2, AR197: 2, AR309: 1, AR213: 1, AR096: 1, AR104: 1, AR312: 1 S0001: 1		

183	HFXBT66	580831	193	172 - 252	697		AR089: 61, AR060: 29 S0001: 1		
184	HFXFZ46	600361	194	258 - 278	698		AR060: 1 S0001: 1		
185	HGBER72	826710	195	43 - 102	699		AR089: 27, AR060: 15 L0766: 12, H0436: 9, H0543: 8, L0769: 6, L0749: 6, L0731: 6, H0556: 5, L0655: 5, L0439: 4, L0758: 4, S0114: 3, H0255: 3, L0776: 3, L0659: 3, L0783: 3, L0751: 3, H0423: 3, S0358: 2, S0360: 2, S0007: 2, H0549: 2, H0550: 2, H0486: 2, H0014: 2, S0388: 2, H0424: 2, H0031: 2, H0628: 2, L0771: 2, L0662: 2, L0794: 2, L0791: 2, L0438: 2, S0328: 2, L0740: 2, L0756: 2, H0265: 1, H0686: 1, S0134: 1, H0657: 1, H0656: 1, S0001: 1, S0418: 1, L0619: 1, H0619: 1, H0351: 1, S0222: 1, H0592: 1, H0586: 1, T0060: 1, H0250: 1, H0618: 1, H0318: 1, H0052: 1, H0251: 1, H0545: 1, H0012: 1, H0201: 1, S6028: 1, H0288: 1, H0622: 1, T0023: 1, L0483: 1, S0036: 1, H0135: 1, H0040: 1, H0264: 1, S0039: 1, L0640: 1, L0763: 1, L0770: 1, L0761: 1, L0648: 1, L0521: 1, L0533: 1, L0774: 1, L0775: 1, L0376: 1, L0378: 1, L0629: 1, L0793: 1, L0666: 1,		

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186	HGBEY14	658691	196	233 - 352	700		AR089: 1, AR060: 1 L0766: 9, L0803: 8, L0777: 4, L0770: 3, H0411: 2, H0012: 2, L0809: 2, L0793: 2, L0747: 2, H0620: 1, H0014: 1, H0087: 1, H0272: 1, L0662: 1, L0794: 1, L0776: 1, L0791: 1, L0666: 1, L0665: 1, H0435: 1, H0627: 1, L0749: 1, L0779: 1, L0731: 1, L0758: 1, H0445: 1, S0026: 1 and H0667: 1.		
187	HGBGN34	648659	197	280 - 426	701	Asn-2 to Val-8.	AR060: 11, AR089: 6 L0747: 5, H0427: 2, H0662: 1, S0358: 1, H0492: 1, S0280: 1, T0001: 1, H0014: 1, H0030: 1, H0674: 1, L0776: 1, L0659: 1, S0330: 1, L0777: 1 and L0752: 1.		
188	HGBHP91	693011	198	50 - 208	702		AR089: 24, AR060: 15 H0014: 1		
189	HGCAC19	851527	199	317 - 346	703		L0794: 14, L0803: 12, L0766: 7, H0013: 6, H0090: 6, L0663: 6, L0777: 6, L0731: 6, L0759: 6, H0457: 5, H0328: 5, L0493: 5, L0666: 5, L0754: 5, L0749: 5, H0543: 5, H0656: 4,		

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190	HGCAC19	801999	200	317 - 346	704		L0794: 14, L0803: 12, L0766: 7, H0013: 6, H0090: 6, L0663: 6, L0777: 6, L0731: 6, L0759: 6, H0457: 5, H0328: 5, L0493: 5, L0666: 5, L0754: 5, L0749: 5, H0543: 5, H0656: 4,		

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191	HGCAC19	842540	201	315 - 344	705		L0794: 14, L0803: 12, L0766: 7, H0013: 6, H0090: 6, L0663: 6, L0777: 6, L0731: 6, L0759: 6, H0457: 5, H0328: 5, L0493: 5, L0666: 5, L0754: 5, L0749: 5, H0543: 5, H0656: 4,		

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192	HHEAK45	765278	202	813 - 824	706		AR089: 7, AR060: 4 L0758: 9, L0748: 6, L0747: 6, L0779: 5, L0750: 4, H0556: 3, L0804: 3, H0658: 3, H0656: 2, L0770: 2, L0769: 2, L0774: 2, H0144: 2, H0648: 2, L0439: 2,		

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193	HHEGS55	858372	203	159 - 269	707		AR089: 37, AR060: 16 H0542: 5		
194	HHEOW19	886174	204	183 - 377	708	Ala-41 to Pro-57.	AR207: 25, AR089: 25, AR308: 25, AR263: 24, AR264: 24, AR311: 21, AR213: 19, AR312: 18, AR212: 18, AR309: 17, AR272: 17, AR060: 15, AR053: 15, AR104: 14, AR096: 14, AR197: 13, AR246: 11, AR198: 10, AR245: 10, AR252: 10, AR205: 10, AR201: 9, AR253: 9, AR033: 9, AR243: 8, AR271: 8, AR254: 8, AR039: 7, AR204: 6, AR055: 6, AR250: 5, AR061: 4 L0745: 5, L0748: 4, H0031: 3, L0775: 3, L0776: 3, L0758: 3, H0458: 2, H0050: 2, S0003: 2, H0529: 2, L0764: 2, L0747: 2, L0599: 2, L0362: 2, H0556:		

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195	HHFFF87	778071	205	229 - 354	709	Ser-5 to Gly-11, Pro-25 to Tyr-31.	AR089: 35, AR263: 26, AR060: 25, AR310: 23, AR265: 23, AR213: 23, AR033: 21, AR053: 19, AR312: 18, AR096: 17, AR052: 17, AR055: 17, AR309: 16, AR253: 15, AR251: 14, AR249: 14, AR248: 14, AR205: 11, AR061: 10, AR244: 9, AR039: 8, AR206: 7, AR246: 7, AR273: 6, AR202: 6, AR194: 5,		

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196	HHFFL34	753230	206	42 - 713	710	Asn-146 to Arg-157, Leu-168 to Asn-183, Gln-189 to Asn-199, Gln-206 to Ser-217.	AR265: 3, AR248: 3, AR309: 2, AR310: 2, AR206: 1, AR055: 1, AR186: 1, AR205: 1 H0599: 3, L0766: 3, S0037: 3, H0556: 2, H0242: 2, H0620: 2, H0543: 2, H0170: 1, T0002: 1, H0300: 1, S0360: 1, S0045: 1, S0476: 1, H0549: 1, H0309: 1, H0545: 1, H0081: 1, H0050: 1, S0388: 1, H0644: 1, T0041: 1, S0144: 1, H0529: 1, H0026: 1, L0659: 1, H0520: 1, S0126: 1, H0539:		

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197	HHFFS40	824059	207	37 - 180	711		AR089: 13, AR060: 8 H0521: 8, L0748: 6, L0591: 6, L0766: 5, L0754: 5, H0069: 4, H0032: 4, L0803: 4, L0602: 4, H0423: 4, H0556: 3, H0657: 3, S0046: 3, H0013: 3, H0596: 3, H0046: 3, H0620: 3, H0355: 3, S0003: 3, H0622: 3, H0169: 3, H0674: 3, H0100: 3, L0662: 3, L0794: 3, L0526: 3, H0670: 3, L0740: 3, L0759: 3, S0134: 2, S0212: 2, H0661: 2, S0420: 2, H0580: 2, H0052: 2, H0050: 2, L0471: 2, H0266: 2, H0090: 2, H0038: 2, H0488: 2, L0564: 2, H0529: 2, L0769: 2, L0667: 2, L0771: 2, L0521: 2, L0804: 2, L0384: 2, L0809: 2, L0665: 2, H0659: 2, S0152: 2, S0044: 2, L0743: 2, L0750: 2, L0731: 2, L0592: 2, L0599: 2, L0608: 2, L0362: 2, H0171: 1, H0686: 1, H0656: 1, H0663: 1, H0662: 1, H0402: 1, S0356: 1, S0444: 1, S0132: 1, H0549: 1, H0550: 1, S0222: 1, H0574: 1, H0632: 1, H0486: 1, T0082: 1, H0581: 1, S0049: 1, H0194: 1, H0309: 1, H0123: 1,		

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198	HHGCS78	634605	208	290 - 364	712		AR089: 48, AR060: 31 L0770: 4, H0333: 3, L0783: 2, L0731: 2, H0445: 2, S0418: 1, S0002: 1, L0369: 1, L0643: 1, L0764: 1, L0794: 1, L0803: 1, L0775: 1, L0375: 1, L0378: 1, L0655: 1, L0809: 1, L0666: 1, L0664: 1, L0754:		

							1, L0747: 1, L0749: 1, L0752: 1 and L0591: 1.		
199	HHGDT26	658692	209	181 - 207	713		L0748: 2, S0218: 1, H0333: 1, H0271: 1, S0210: 1, L0776: 1, S0188: 1, L0745: 1 and H0423: 1.		
200	HHPFU28	824573	210	156 - 239	714	Ser-12 to Tyr-17.	AR089: 5, AR060: 5 L0622: 2, L0518: 2, L0382: 2, L0663: 2, L0750: 2, L0752: 2, L0362: 2, S0114: 1, S0420: 1, S0354: 1, S0222: 1, S0010: 1, H0046: 1, H0051: 1, L0483: 1, H0644: 1, H0412: 1, H0529: 1, L0794: 1, L0561: 1, L0666: 1, S0330: 1, S0028: 1, L0779: 1, L0777: 1, L0758: 1, S0031: 1, H0444: 1 and L0592: 1.		
201	HHPSA85	658695	211	157 - 273	715		AR060: 5, AR089: 4 L0756: 5, H0051: 4, L0438: 4, L0759: 4, S0031: 4, S0007: 3, S6028: 3, L0666: 3, L0439: 3, H0556: 2, S6024: 2, S0300: 2, H0013: 2, S0036: 2, L0770: 2, L0411: 1, L0393: 1, H0393: 1, H0581: 1, H0235: 1, H0327: 1, H0046: 1, H0009: 1, L0157: 1, H0201: 1, S0051: 1, H0399: 1, H0064: 1, H0038: 1, H0040: 1, H0634: 1, H0100: 1, L0638: 1, L0796: 1, L0768: 1, L0794: 1, L0766: 1, L0803: 1, L0606: 1, L0791: 1, L0792: 1, H0144: 1, H0698: 1, H0547: 1, H0519:		

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202	HHSBI06	639097	212	690 - 707	716		AR060: 11, AR089: 11 L0766: 12, L0794: 7, L0439: 7, L0749: 7, L0803: 6, L0740: 6, L0745: 6, H0052: 5, L0754: 5, L0770: 4, L0666: 4, L0748: 4, H0553: 3, L0790: 3, L0589: 3, H0543: 3, S0114: 2, S0134: 2, S0444: 2, H0747: 2, S0476: 2, H0393: 2, H0586: 2, H0013: 2, H0599: 2, H0014: 2, S0051: 2, S0003: 2, H0032: 2, H0674: 2, H0135: 2, S0142: 2, L0372: 2, L0764: 2, L0655: 2, L0657: 2, L0659: 2, L0809: 2, L0789: 2, L0792: 2, H0144: 2, H0684: 2, H0658: 2, H0539: 2, H0521: 2, S0028: 2, L0750: 2, L0779: 2, L0777: 2, L0752: 2, L0731: 2, L0758: 2, H0653: 2, H0542: 2, H0556: 1, H0716: 1, H0650: 1, H0381: 1, S0116: 1, H0661: 1, S0356: 1, S0442: 1, S0360: 1, H0675: 1, H0734: 1, H0261: 1, H0549: 1, S0222: 1, T0114: 1, H0706: 1, H0036: 1, H0318: 1, H0581: 1, L0738: 1, H0123: 1, L0471: 1, H0620: 1, S0050: 1, H0015: 1, H0051: 1, H0355: 1, H0416: 1, H0286: 1, H0328: 1, H0428:		

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203	HHSBI65	801910	213	62 - 229	717	Ala-16 to Val-35.	AR207: 7, AR198: 7, AR204: 6, AR039: 6, AR053: 6, AR250: 5, AR264: 5, AR055: 5, AR096: 5, AR309: 5, AR060: 5, AR061: 5, AR201: 5, AR311: 4, AR252: 4, AR213: 4, AR253: 4, AR212: 4, AR312: 4, AR263: 4, AR205: 4, AR271: 3,		

							AR033: 3, AR246: 3, AR308: 3, AR089: 3, AR272: 3, AR104: 3, AR197: 3, AR243: 2 L0439: 7, L0794: 5, L0766: 5, S0354: 2, H0549: 2, S0051: 2, S0142: 2, L0372: 2, L0809: 2, L0438: 2, H0658: 2, H0650: 1, H0381: 1, S0116: 1, S0356: 1, S0360: 1, H0261: 1, H0586: 1, H0486: 1, H0036: 1, H0052: 1, L0738: 1, H0457: 1, H0014: 1, H0051: 1, H0617: 1, H0032: 1, H0561: 1, H0633: 1, L0763: 1, L0761: 1, L0800: 1, L0644: 1, L0645: 1, L0764: 1, L0648: 1, L0655: 1, L0657: 1, L0658: 1, L0368: 1, L0665: 1, S0044: 1, H0626: 1, L0731: 1, S0434: 1, H0653: 1 and H0423: 1.		
204	HHSDI53	862028	214	221 - 295	718		AR089: 19, AR060: 11 L0766: 10, L0752: 8, L0439: 6, L0747: 6, L0740: 5, L0756: 5, L0779: 4, L0777: 4, L0731: 4, S0051: 3, L0803: 3, L0774: 3, L0809: 3, L0754: 3, S0360: 2, S0408: 2, H0574: 2, L0763: 2, L0805: 2, L0663: 2, L0751: 2, L0755: 2, L0759: 2, L0601: 2, H0624: 1, S0040: 1, H0713: 1, S0298: 1, S0420: 1, S0444: 1, H0580: 1, H0351: 1, H0600: 1, H0331: 1, H0013:		

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205	HHSFC09	801911	215	380 - 478	719		L0752: 6, L0758: 4, L0662: 3, L0776: 3, L0666: 3, L0750: 3, L0755: 3, H0657: 2, H0597: 2, H0150: 2, H0081: 2, S0388: 2, H0213: 2, H0617: 2, L0770: 2, L0764: 2, L0775: 2, L0657: 2, L0659: 2, L0439: 2, L0740: 2, L0751: 2, L0747: 2, H0543: 2, H0624: 1, H0265: 1, H0254: 1, H0638: 1, H0586: 1, S0280: 1, H0618: 1, H0581: 1, H0309: 1, H0544: 1, L0471: 1, H0024: 1, S0051: 1, H0688: 1, H0424: 1, H0644: 1, L0055: 1, H0100: 1, L0351: 1, H0396: 1, S0144: 1, L0769: 1, L0638: 1, L0643: 1, L0773: 1, L0648: 1, L0766: 1, L0381: 1, L0806:		

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206	HHSGL28	801912	216	453 - 473	720		L0439: 8, L0438: 3, S0440: 2, L0666: 2, H0170: 1, S0442: 1, H0318: 1, S0049: 1, H0052: 1, H0050: 1, H0057: 1, S0388: 1, S0214: 1, H0598: 1, S0036: 1, H0063: 1, H0551: 1, L0520: 1, L0796: 1, L0662: 1, L0766: 1, L0664: 1, H0547: 1, H0435: 1, H0521: 1, L0779: 1, L0777: 1, L0752: 1 and L0594: 1.		
207	HILCA24	782450	217	189 - 1172	721	Gln-52 to Arg-57, Glu-74 to Leu-84, Val-104 to Asp-110, Gly-157 to Gly-163, Asn-185 to Ser-195, Arg-245 to Asp-250, Pro-302 to Pro-310, Thr-316 to Tyr-322.	L0748: 4, H0090: 2, L0659: 2, H0521: 2, L0777: 2, L0608: 2, H0543: 2, T0002: 1, S0114: 1, S0358: 1, T0109: 1, H0581: 1, H0622: 1, H0031: 1, H0644: 1, S0002: 1, L0526: 1, S0380: 1, H0522: 1, L0749: 1 and L0779: 1.		
208	HILCA24	869856	218	191 - 1174	722	Gln-52 to Arg-57, Glu-74 to Leu-84, Val-104 to Asp-110, Gly-157 to Gly-163, Asn-185 to Ser-195, Arg-245 to Asp-250, Pro-302 to Pro-310, Thr-316 to Tyr-322.	L0748: 4, H0090: 2, L0659: 2, H0521: 2, L0777: 2, L0608: 2, H0543: 2, T0002: 1, S0114: 1, S0358: 1, T0109: 1, H0581: 1, H0622: 1, H0031: 1, H0644: 1, S0002: 1, L0526: 1, S0380: 1, H0522: 1, L0749: 1 and L0779: 1.		
209	HISAT67	843549	219	1239 - 1409	723		AR089: 11, AR060: 6 L0751: 8, L0754: 6, L0731: 6, L0766: 5, L0439: 5,		

							L0750: 5, L0770: 4, L0666: 4, L0776: 3, L0665: 3, S0356: 2, S0438: 2, L0769: 2, L0659: 2, L0663: 2, S0406: 2, L0748: 2, L0749: 2, T0002: 1, S0360: 1, H0607: 1, H0574: 1, H0632: 1, L0021: 1, H0599: 1, H0318: 1, L0738: 1, H0178: 1, H0059: 1, T0041: 1, L0763: 1, L0638: 1, L5565: 1, L0772: 1, L0373: 1, L0764: 1, L0662: 1, L0626: 1, L0363: 1, L0650: 1, L0774: 1, L0806: 1, L0654: 1, L0789: 1, L0664: 1, S0374: 1, H0659: 1, H0670: 1, H0539: 1, L0740: 1, L0746: 1, L0752: 1, L0755: 1, L0757: 1, L0584: 1, L0596: 1, L0608: 1 and H0352: 1.		
210	HJBCU75	638329	220	61 - 78	724		AR186: 10, AR244: 10, AR273: 8, AR052: 7, AR202: 7, AR206: 6, AR272: 6, AR264: 6, AR039: 6, AR055: 6, AR061: 6, AR309: 5, AR310: 5, AR060: 5, AR246: 4, AR311: 4, AR312: 4, AR249: 4, AR204: 4, AR213: 4, AR096: 4, AR089: 4, AR194: 4, AR033: 3, AR104: 3, AR251: 3, AR265: 3, AR243: 3, AR271: 3, AR263: 3, AR198: 2, AR308: 2,		

							AR053: 2, AR205: 2, AR201: 1 S0022: 7, L0805: 3, H0556: 2, H0046: 2, L0764: 2, L0662: 2, S0126: 2, L0748: 2, H0305: 1, H0013: 1, H0050: 1, H0615: 1, H0039: 1, H0040: 1, H0087: 1, T0042: 1, L0643: 1, L0794: 1, L0803: 1, L0804: 1, L0807: 1, L0809: 1, L0666: 1, H0144: 1, H0547: 1, L0749: 1, L0779: 1 and L0758: 1.		
211	HJMAA03	824062	221	527 - 556	725		AR207: 12, AR309: 11, AR252: 10, AR053: 9, AR212: 9, AR213: 8, AR198: 8, AR253: 8, AR263: 7, AR245: 7, AR264: 7, AR197: 7, AR311: 7, AR308: 6, AR096: 6, AR312: 6, AR205: 6, AR246: 6, AR039: 5, AR089: 5, AR201: 5, AR272: 5, AR204: 5, AR271: 5, AR250: 5, AR033: 4, AR243: 4, AR254: 4, AR055: 4, AR104: 3, AR060: 3, AR061: 3 L0749: 8, L0777: 6, L0803: 5, L0748: 5, H0486: 4, H0135: 4, L0794: 4, L0766: 4, L0804: 4, H0551: 3, L0754: 3, L0599: 3, H0542: 3, H0427: 2, H0545: 2, H0674: 2, L0774: 2, L0776: 2, L0655: 2, H0521: 2,		

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212	HJMAV41	862029	222	207 - 290	726		AR089: 9, AR060: 7 L0742: 15, L0439: 7, S0007: 5, H0135: 4, L0741: 4, L0516: 2, H0052: 2, L0438: 2, L0759: 2, L0426: 1, H0402: 1, H0351: 1, S0222: 1, H0441: 1, H0333: 1, H0545: 1, S0388: 1, S0038: 1, L0351: 1, L0370: 1, L0770: 1, L0769: 1, L0805: 1, L0659: 1, L0792: 1, H0547: 1, L0750: 1,		

							L0366: 1, H0008: 1 and H0352: 1.		
213	HJMAY90	793678	223	2492 - 2596	727		AR089: 20, AR060: 11 S0027: 12, H0046: 11, L0777: 9, L0757: 9, L0764: 8, L0809: 7, L0747: 6, H0620: 5, S3014: 5, L0748: 5, L0751: 5, L0731: 5, H0341: 4, H0674: 4, H0135: 4, L0783: 4, L0666: 4, S0206: 4, L0591: 4, S0045: 3, H0619: 3, H0550: 3, H0581: 3, S0002: 3, L0770: 3, L0372: 3, L0662: 3, L0775: 3, L0518: 3, H0658: 3, S0028: 3, L0604: 3, H0638: 2, S0356: 2, S0360: 2, H0013: 2, S0474: 2, H0196: 2, H0597: 2, H0012: 2, H0039: 2, H0622: 2, H0040: 2, H0100: 2, H0560: 2, S0150: 2, L0769: 2, L0761: 2, L0766: 2, L0804: 2, L0663: 2, H0520: 2, S0126: 2, H0521: 2, S3012: 2, L0439: 2, L0750: 2, L0779: 2, L0759: 2, L0600: 2, L0615: 1, S6024: 1, H0295: 1, H0656: 1, S0001: 1, H0484: 1, S0358: 1, S0376: 1, H0580: 1, S0476: 1, H0393: 1, S0222: 1, H0455: 1, H0586: 1, H0587: 1, H0497: 1, H0574: 1, H0632: 1, H0427: 1, S0280: 1, H0599: 1, H0575: 1, H0036: 1, H0318: 1, H0052: 1, H0085: 1, H0263: 1,		

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214	HJPBE39	801960	224	170 - 226	728		AR061: 8, AR089: 6, AR055: 5, AR309: 5, AR312: 5, AR104: 4, AR060: 4, AR205: 4, AR243: 4, AR204: 4, AR311: 4, AR254: 3, AR250: 3, AR264: 3, AR201: 3, AR053: 3, AR096: 3, AR308: 3, AR197: 3, AR213: 3,		

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215	HJPBK28	638191	225	256 - 387	729		L0439: 5, L0759: 5, H0556: 4, L0771: 4, H0144: 4, L0770: 3, L0643: 3, L0794: 3, H0156: 2, H0188: 2, H0090: 2, H0641: 2, L0662: 2, L0766: 2, L0803: 2, L0776: 2, L0659: 2, L0790: 2, H0522: 2, S0027: 2, H0295: 1, T0049: 1, S0116: 1, H0663: 1, H0662: 1, S0356: 1, S0376: 1, S0132: 1, H0586: 1, H0587:		

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216	HJPCH08	840365	226	374 - 727	730	Glu-3 to Phe-9, Gln-17 to Leu-50.	AR060: 6, AR089: 4 L0758: 8, L0777: 7, H0618: 6, L0749: 6, L0774: 4, L0748: 4, L0750: 4, S0418: 3, S0358: 3, H0266: 3, L0770: 3, L0766: 3, S0360: 2, H0150: 2, H0087: 2, L0369: 2, L0769: 2, L0771: 2, L0789: 2, L0665: 2, L0759: 2, H0422: 2, H0556: 1, H0295: 1, H0370: 1, H0331: 1, H0013: 1, L0021: 1, L0022: 1, H0253: 1, H0052: 1, H0204: 1, H0544: 1, H0012: 1, H0620: 1, H0024: 1, H0083: 1, H0510: 1, H0416: 1, H0252: 1, H0424: 1, H0617: 1, L0564: 1, H0494: 1, S0144: 1, L0372: 1, L0646: 1, L0800: 1, L0641: 1, L0764:		

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217	HKABU43	838573	227	755 - 1600	731	Ile-69 to Ala-74, Ala-122 to Ser-129, Thr-160 to Glu-170, Lys-197 to Arg-202.	L0794: 7, L0803: 3, H0052: 2, S0250: 2, H0032: 2, H0494: 2, H0529: 2, L0666: 2, L0663: 2, L0747: 2, L0759: 2, H0657: 1, H0664: 1, H0662: 1, S0442: 1, H0733: 1, S0046: 1, H0640: 1, H0331: 1, H0559: 1, T0039: 1, H0013: 1, S0280: 1, H0318: 1, T0110: 1, H0024: 1, S0364: 1, H0591: 1, H0038: 1, H0040: 1, S0142: 1, L0640: 1, L0667: 1, L0764: 1, L0662: 1, L0804: 1, L0659: 1, L0517: 1, L0789: 1, L4559: 1, L0664: 1, S0126: 1, H0435: 1, H0539: 1, S0152: 1, H0521: 1, H0522: 1, S0027: 1, L0779: 1, L0758: 1, L0485: 1, L0601: 1, S0026: 1, H0667: 1, S0192: 1, H0542: 1 and H0506: 1.		
218	HKACI79	853361	228	207 - 359	732	Ser-37 to Gly-43.	AR089: 31, AR060: 9 H0659: 2, S0418: 1, L0004: 1, H0041: 1, H0087: 1, H0494: 1, H0646: 1, S0422: 1, L0373: 1, L0766: 1, L0665: 1, S0380: 1, L0748: 1, L0740: 1 and L0589: 1.		

219	HKAFF50	790192	229	343 - 495	733	Leu-19 to Gln-29.	AR039: 18, AR271: 17, AR205: 15, AR263: 15, AR265: 14, AR194: 13, AR273: 12, AR310: 12, AR213: 11, AR202: 11, AR053: 11, AR052: 11, AR312: 10, AR089: 10, AR104: 10, AR246: 10, AR033: 10, AR096: 9, AR251: 9, AR243: 9, AR206: 8, AR309: 8, AR249: 6, AR248: 6, AR244: 6, AR198: 6, AR055: 6, AR060: 5, AR204: 5, AR186: 5, AR253: 5, AR061: 4 S0114: 1, S0354: 1, S0046: 1, H0392: 1, H0616: 1, H0494: 1, H0561: 1, H0539: 1, L0602: 1, L0740: 1 and S0424: 1.		
220	HKGBF25	738797	230	261 - 371	734		AR089: 6, AR060: 2 H0538: 1		
221	HKIXC44	716213	231	572 - 682	735		AR060: 9, AR089: 7 L0770: 7, L0742: 5, L0439: 4, L0776: 3, S0358: 2, H0619: 2, S0222: 2, L0769: 2, L0638: 2, L0796: 2, L0805: 2, H0593: 2, L0753: 2, L0485: 2, L0608: 2, H0329: 1, H0351: 1, H0441: 1, H0611: 1, H0370: 1, H0013: 1, H0196: 1, H0052: 1, H0251: 1, H0041: 1, H0024: 1, H0622: 1, S0366: 1, H0623: 1, L0648: 1, L0523: 1, L0806: 1, L0788: 1, L0666: 1, L0663: 1,		

							H0648: 1, H0539: 1, S0152: 1, L0612: 1, L0777: 1, L0599: 1 and S0242: 1.		
222	HKMLK03	734213	232	214 - 249	736		H0431: 1, L0352: 1, H0478: 1 and H0445: 1.		
223	HKMLM95	840367	233	390 - 404	737		AR060: 13, AR089: 13 L0748: 7, L0740: 6, L0754: 6, S0474: 5, L0439: 5, L0747: 5, S0003: 4, L0770: 4, L0662: 4, L0805: 4, S0134: 3, H0638: 3, S0222: 3, L0764: 3, L0783: 3, L0731: 3, L0758: 3, S0358: 2, S0045: 2, H0050: 2, L0471: 2, S0364: 2, H0591: 2, H0264: 2, L0763: 2, L0794: 2, L0766: 2, L0657: 2, L0517: 2, H0723: 2, H0521: 2, L0756: 2, L0757: 2, L0485: 2, L0604: 2, L0595: 2, T0002: 1, H0222: 1, S0040: 1, S0114: 1, H0583: 1, S0282: 1, S0418: 1, S0420: 1, L0534: 1, L0539: 1, S0356: 1, S0444: 1, S0360: 1, S0007: 1, S0046: 1, S0132: 1, L0717: 1, H0431: 1, H0461: 1, H0586: 1, H0559: 1, L0622: 1, L0623: 1, H0013: 1, H0250: 1, H0575: 1, H0706: 1, H0036: 1, T0071: 1, H0581: 1, H0421: 1, H0596: 1, L0040: 1, H0057: 1, S0051: 1, H0083: 1, H0060: 1, H0039: 1, H0628: 1, H0674: 1, H0708: 1, H0068: 1, H0038: 1, H0634: 1,		

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224	HKTAB41	695732	234	172 - 204	738		AR089: 45, AR060: 26 L0794: 4, H0574: 1 and H0239: 1.		
225	HLDBG17	855953	235	184 - 309	739	Leu-29 to His-34.	AR089: 92, AR060: 59 L0581: 185, H0509: 97, H0510: 36, H0014: 25, H0355: 18, H0393: 14, L0748: 13, H0574: 12, H0331: 9, H0057: 5, H0144: 5, H0015: 3, L0605: 3, H0357: 2, H0427: 2, L0663: 2, L0749: 2, L0756: 2, H0662: 1, H0351: 1, H0349: 1, H0047: 1, H0038: 1, L0521: 1, L0518: 1, L0809: 1, L0787: 1, L0438: 1, L0439: 1, L0747: 1, L0759:		

							1 and S0412: 1.		
226	HLDCA54	842190	236	550 - 690	740		AR060: 67, AR089: 41 L0157: 11, L0005: 3, H0619: 2, L0771: 2, L0766: 2, L0803: 2, S0152: 2, L0740: 2, L0754: 2, H0716: 1, S0222: 1, S0010: 1, H0373: 1, H0428: 1, H0059: 1, H0509: 1, L0794: 1, L0804: 1, L0805: 1, L0809: 1, L0666: 1, L0665: 1, S0044: 1, L0749: 1, L0756: 1, L0759: 1, S0196: 1 and H0543: 1.		
227	HLDQU79	740755	237	99 - 1142	741	Leu-68 to Lys-74, Tyr-109 to Lys-115, Gln-200 to Val-205, Lys-207 to Lys-214, Glu-237 to Ile-244, Ala-271 to Thr-279, Ser-317 to Ser-329, Gln-342 to Gly-348.	AR253: 8, AR245: 6, AR243: 5, AR263: 5, AR264: 4, AR250: 4, AR060: 4, AR309: 4, AR213: 4, AR271: 4, AR312: 3, AR246: 3, AR311: 3, AR212: 3, AR252: 3, AR308: 2, AR198: 2, AR039: 2, AR061: 2, AR104: 2, AR201: 2, AR055: 2, AR089: 2, AR096: 2, AR207: 2, AR272: 2, AR205: 2, AR033: 1, AR254: 1 L0748: 9, L0731: 7, L0771: 6, L0759: 6, H0013: 5, L0764: 4, L0747: 4, L0758: 4, H0265: 3, H0039: 3, H0038: 3, L0769: 3, L0766: 3, L0775: 3, H0144: 3, L0755: 3, S0444: 2, H0318: 2, H0050: 2, L0471: 2, H0266: 2, L0374: 2, L0649:		

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		837599	512	75 - 1121	1016				
228	HLDRT09	830544	238	522 - 719	742	Ser-18 to Ser-30.	AR089: 6, AR060: 5 L0493: 8, L0500: 7, L0511: 7, L0508: 6, L0510: 6, L0514: 5, L0504: 4, L0499: 4, L0758: 4, L0507: 3, L0794: 3, L0497: 3, L0439: 3, H0509: 2, L0505: 2,		

							L0502: 2, L0503: 2, L0501: 2, L0509: 2, L0779: 2, H0265: 1, S0116: 1, H0483: 1, S0360: 1, H0431: 1, H0370: 1, L0015: 1, L0021: 1, H0510: 1, H0181: 1, H0617: 1, H0040: 1, H0633: 1, L0769: 1, L0639: 1, L0521: 1, L0662: 1, L0768: 1, L0804: 1, L0775: 1, L0515: 1, L0809: 1, L0789: 1, H0144: 1, H0682: 1, H0659: 1, H0660: 1, H0672: 1, L0748: 1, L0750: 1, S0192: 1 and L0697: 1.		
229	HLHAP05	638476	239	45 - 89	743	Gln-4 to Leu-14.	L0005: 3, H0024: 2, H0209: 1 and H0445: 1.		
230	HLHCS23	560663	240	25 - 129	744		AR060: 4, AR089: 2 H0024: 1		
231	HLIBO72	883431	241	167 - 550	745		AR096: 31, AR198: 27, AR312: 26, AR089: 24, AR249: 23, AR243: 20, AR053: 20, AR052: 18, AR265: 17, AR248: 17, AR213: 16, AR309: 15, AR271: 15, AR251: 15, AR033: 14, AR204: 13, AR186: 13, AR244: 13, AR263: 13, AR039: 13, AR253: 12, AR310: 12, AR104: 12, AR194: 11, AR273: 11, AR060: 11, AR246: 7, AR206: 7, AR205: 7, AR202: 5, AR061: 3, AR055: 3 H0355: 1		
232	HLICE88	840321	242	708 - 716	746		AR089: 13, AR060: 13 L0581: 21, H0098: 14,		

							H0509: 7, H0015: 5, L0748: 5, H0147: 4, H0014: 4, S0438: 3, H0355: 2, H0510: 2, T0078: 2, H0170: 1, L0448: 1, H0149: 1, H0357: 1, H0331: 1, H0003: 1, H0349: 1, H0350: 1, L0787: 1, L0605: 1 and L0599: 1.		
233	HLICO10	658740	243	441 - 659	747	Pro-30 to Asn-42, Ser-49 to Val-55, Ser-67 to Ser-72.	AR089: 17, AR060: 13 L0439: 11, L0758: 10, L0766: 9, L0748: 8, L0596: 8, L0776: 7, L0747: 7, L0749: 7, L0771: 6, H0622: 4, L0517: 4, L0744: 4, L0740: 4, L0756: 4, H0251: 3, L0483: 3, L0662: 3, L0666: 3, L0438: 3, L0752: 3, L0759: 3, H0265: 2, S0114: 2, S0212: 2, S0418: 2, S0420: 2, S0356: 2, S0376: 2, S0360: 2, H0457: 2, L0770: 2, L0646: 2, L0764: 2, L0768: 2, L0774: 2, L0806: 2, L0663: 2, L0664: 2, H0689: 2, L0750: 2, L0731: 2, L0757: 2, H0543: 2, H0556: 1, T0002: 1, S0134: 1, S0218: 1, L0002: 1, L0785: 1, S0001: 1, H0661: 1, H0664: 1, H0662: 1, S0354: 1, H0580: 1, H0619: 1, S0222: 1, H0333: 1, H0013: 1, H0635: 1, H0156: 1, H0002: 1, H0042: 1, H0575: 1, L0105: 1, H0581: 1, H0374: 1, H0052: 1, H0085: 1, T0110: 1, L0471: 1, H0620: 1,		

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234	HLJBS28	658742	244	359 - 412	748		AR089: 5, AR060: 3 L0766: 11, L0803: 3, H0659: 3, L0744: 3, L0731: 3, L0758: 3, L0598: 2, L0649: 2, L0655: 2, L0747: 2, L0759: 2, S0342: 1, H0657: 1, H0459: 1, H0580: 1, H0587: 1, H0156: 1, L0021: 1, H0590: 1, H0375: 1, H0615: 1, H0428: 1, T0041: 1, L0638: 1, L0637: 1, L0651: 1, L0805: 1, L0659: 1, L0791: 1, H0702: 1, H0520: 1, H0547: 1, H0660: 1, H0648: 1, S0328: 1, H0521: 1, L0756: 1, L0752: 1, L0755: 1, H0445: 1, H0707: 1, L0581: 1, S0194: 1, H0423: 1, H0422:		

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235	HLMBW89	701996	245	47 - 112	749	His-15 to Gly-21.	S0358: 2, H0331: 2, H0620: 2, L0646: 2, L0804: 2, L0666: 2, S0212: 1, H0255: 1, H0661: 1, S0444: 1, H0733: 1, H0351: 1, H0333: 1, H0632: 1, H0012: 1, S0440: 1, L0763: 1, L0770: 1, L0773: 1, L0803: 1, L0653: 1, L0659: 1, L0665: 1, L0438: 1, H0684: 1, L0439: 1, L0749: 1, L0757: 1, L0758: 1, L0588: 1, L0608: 1 and H0542: 1.		
236	HLMGP50	647603	246	214 - 246	750		AR060: 3, AR089: 2 H0255: 2, H0385: 1, L0753: 1 and H0595: 1.		
237	HLMJB64	658699	247	12 - 161	751	Ser-6 to Gly-11.	H0521: 11, L0751: 9, L0777: 9, H0255: 8, L0747: 8, S0360: 7, L0766: 7, H0542: 7, L0754: 6, L0749: 6, L0757: 6, H0265: 5, H0052: 5, L0659: 5, L0665: 5, S0126: 5, H0539: 5, L0748: 5, L0439: 5, L0740: 5, L0758: 5, L0759: 5, H0624: 4, H0717: 4, H0046: 4, H0024: 4, H0551: 4, L0776: 4, L0438: 4, L0602: 4, L0743: 4, L0779: 4, H0575: 3, H0253: 3, H0545: 3, H0266: 3, H0284: 3, H0039: 3, H0068: 3, H0509: 3, L0770: 3, L0769: 3, L0662: 3, L0774: 3, L0809: 3, L0666: 3, L0663: 3, H0435: 3, H0672: 3, H0522: 3, S0406: 3, S0028: 3,		

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238	HLMMX62	688051	248	185 - 268	752	Gln-20 to Lys-28.	AR060: 7, AR089: 7 H0255: 2, H0052: 1 and H0673: 1.		
239	HLQAS12	886180	249	305 - 343	753		AR060: 4, AR089: 1		

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240	HLQCL64	864966	250	3 - 548	754		AR060: 8, AR089: 4 H0574: 19, H0271: 8, H0632: 6, S0428: 6, H0331: 5, S0052: 5, H0510: 4, S0142: 4, S0002: 4, S0053: 4, H0014: 3, S0438: 3, S0216: 3, S0278: 2, H0069: 2, H0635: 2, H0098: 2, H0416: 2, H0634: 2, H0509: 2, H0518: 2, H0222: 1, S0134: 1, S0360: 1, H0489: 1, H0042: 1, H0581: 1, H0046: 1, H0024: 1, H0375: 1, S0344: 1, S0426: 1, L0770: 1, L0646: 1, L0800: 1, L0644: 1, L0764: 1, L0803: 1, L0651: 1, L0525: 1, L0787: 1, L0777: 1 and H0445: 1.		
241	HLQCX36	584786	251	89 - 247	755	Pro-35 to Ser-40.	AR251: 21, AR089: 17, AR253: 12, AR198: 11, AR060: 11, AR248: 11, AR249: 10, AR186: 9, AR096: 9, AR271: 8, AR312: 8, AR104: 8, AR204: 8, AR243: 7, AR244: 7, AR053: 6, AR033: 6, AR052: 6, AR273: 5, AR202: 5,		

							AR206: 5, AR061: 5, AR309: 5, AR039: 5, AR213: 5, AR265: 5, AR055: 5, AR205: 4, AR246: 3, AR310: 3, AR263: 2 L0459: 1 and H0574: 1.		
242	HLWAF06	658701	252	192 - 284	756		L0755: 3, L0664: 2, L0438: 2, L0439: 2, L0751: 2, L0752: 2, H0036: 1, L0471: 1, H0553: 1, S0002: 1, L0775: 1 and H0696: 1.		
243	HLWAU42	840855	253	1751 - 1924	757		AR060: 56, AR089: 39 L0740: 6, L0439: 5, H0553: 4, L0606: 4, L0731: 4, H0486: 3, H0672: 3, L0747: 3, H0581: 2, H0428: 2, H0169: 2, L0774: 2, L0518: 2, L0779: 2, L0752: 2, L0362: 2, S0242: 2, S0412: 2, S0040: 1, H0656: 1, H0341: 1, H0661: 1, H0459: 1, S0360: 1, L0717: 1, H0411: 1, S0278: 1, H0431: 1, H0592: 1, H0331: 1, H0013: 1, S0280: 1, H0599: 1, L0105: 1, H0051: 1, H0355: 1, S0022: 1, H0030: 1, H0031: 1, H0032: 1, H0509: 1, H0132: 1, H0646: 1, S0210: 1, L0766: 1, L0775: 1, L0661: 1, L0658: 1, L0783: 1, L0666: 1, L0664: 1, L0665: 1, L0438: 1, H0648: 1, S0330: 1, S0044: 1, S0028: 1, L0743: 1, L0744: 1, L0756: 1, L0755: 1, L0759: 1,		

							H0595: 1 and S0192: 1.		
244	HLWAU42	695737	254	220 - 393	758		AR060: 56, AR089: 39 L0740: 6, L0439: 5, H0553: 4, L0606: 4, L0731: 4, H0486: 3, H0672: 3, L0747: 3, H0581: 2, H0428: 2, H0169: 2, L0774: 2, L0518: 2, L0779: 2, L0752: 2, L0362: 2, S0242: 2, S0412: 2, S0040: 1, H0656: 1, H0341: 1, H0661: 1, H0459: 1, S0360: 1, L0717: 1, H0411: 1, S0278: 1, H0431: 1, H0592: 1, H0331: 1, H0013: 1, S0280: 1, H0599: 1, L0105: 1, H0051: 1, H0355: 1, S0022: 1, H0030: 1, H0031: 1, H0032: 1, H0509: 1, H0132: 1, H0646: 1, S0210: 1, L0766: 1, L0775: 1, L0661: 1, L0658: 1, L0783: 1, L0666: 1, L0664: 1, L0665: 1, L0438: 1, H0648: 1, S0330: 1, S0044: 1, S0028: 1, L0743: 1, L0744: 1, L0756: 1, L0755: 1, L0759: 1, H0595: 1 and S0192: 1.		
245	HLWAV47	897769	255	200 - 298	759		AR089: 16, AR060: 10 L0754: 8, L0803: 4, H0553: 3, H0478: 2, L0745: 2, L0753: 2, H0170: 1, H0057: 1, L0163: 1, S6028: 1, L0598: 1, L0666: 1, L0663: 1 and H0144: 1.		
246	HLWBB73	740757	256	122 - 274	760		AR060: 5, AR089: 5, AR033: 4, AR052: 2, AR248: 2, AR096: 2,		

							AR310: 2, AR204: 2, AR263: 1 L0749: 16, L0439: 14, L0748: 12, L0759: 7, L0483: 6, L0803: 6, L0758: 5, H0052: 4, L0740: 3, L0731: 3, H0556: 2, S0132: 2, H0455: 2, H0546: 2, S0003: 2, H0032: 2, S0366: 2, H0561: 2, L0766: 2, L0804: 2, L0774: 2, L0606: 2, L0438: 2, H0539: 2, L0751: 2, L0779: 2, L0608: 2, H0170: 1, H0394: 1, S6024: 1, H0661: 1, H0638: 1, S0418: 1, L0005: 1, S0356: 1, S0358: 1, S0360: 1, H0729: 1, H0728: 1, S0045: 1, S6026: 1, H0411: 1, H0331: 1, H0486: 1, H0253: 1, H0581: 1, S0049: 1, H0012: 1, S0388: 1, S0051: 1, T0010: 1, H0687: 1, H0328: 1, H0553: 1, L0055: 1, H0400: 1, S0036: 1, H0591: 1, H0551: 1, T0067: 1, H0264: 1, H0413: 1, S0438: 1, L0369: 1, L0637: 1, L0646: 1, L0521: 1, L0806: 1, L0655: 1, L0809: 1, L0663: 1, L0665: 1, H0691: 1, L0352: 1, H0682: 1, H0659: 1, H0648: 1, S0380: 1, H0521: 1, H0696: 1, S0188: 1, H0134: 1, S0404: 1, L0756: 1, L0777: 1, L0752: 1, S0031: 1, S0260: 1, S0436: 1, L0480:		

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247	HLWCN37	827294	257	81 - 212	761		AR089: 6, AR060: 4 L0766: 11, L0439: 7, L0758: 7, H0644: 5, H0650: 4, H0553: 4, H0616: 4, L0771: 4, L0805: 4, S0328: 4, L0756: 4, L0731: 4, S0222: 3, H0169: 3, S0422: 3, L0770: 3, L0508: 3, L0776: 3, L0438: 3, S0330: 3, L0748: 3, L0747: 3, L0599: 3, H0549: 2, H0494: 2, L0768: 2, L0794: 2, L0783: 2, L0666: 2, L0754: 2, S0031: 2, H0556: 1, S6024: 1, S0001: 1, S0400: 1, H0661: 1, S0360: 1, S0410: 1, H0610: 1, H0592: 1, H0586: 1, H0587: 1, H0599: 1, H0706: 1, H0123: 1, H0373: 1, H0375: 1, S6028: 1, L0138: 1, H0031: 1, L0143: 1, H0264: 1, S0372: 1, S0448: 1, H0647: 1, L0506: 1, L0769: 1, L0638: 1, L0764: 1, L0773: 1, L0767: 1, L0499: 1, L0497: 1, L0659: 1, L0809: 1, H0701: 1, H0703: 1, S0454: 1, H0696: 1, H0555: 1, L0742: 1, L0740: 1, L0750: 1, L0786: 1, L0777: 1 and H0423: 1.		
248	HLWDB73	838453	258	95 - 202	762		L0777: 13, L0803: 9, L0748: 9, L0731: 6, L0766: 5, L0754: 5, H0423: 5,		

							L0794: 4, H0144: 4, L0740: 4, L0779: 4, H0171: 3, S0408: 3, H0580: 3, S0003: 3, H0553: 3, H0616: 3, L0804: 3, H0519: 3, L0439: 3, L0751: 3, S0026: 3, H0422: 3, H0170: 2, H0717: 2, S0356: 2, H0486: 2, H0318: 2, H0644: 2, H0068: 2, H0038: 2, H0551: 2, H0413: 2, L0598: 2, L0769: 2, L0646: 2, L0662: 2, L0388: 2, L0784: 2, L0805: 2, L0776: 2, L0790: 2, H0547: 2, H0710: 2, H0521: 2, L0745: 2, L0747: 2, L0756: 2, L0752: 2, H0624: 1, H0556: 1, S0342: 1, S0114: 1, S0134: 1, S0218: 1, H0650: 1, L0808: 1, S0354: 1, S0444: 1, S0360: 1, S0046: 1, H0411: 1, H0438: 1, H0600: 1, H0632: 1, T0039: 1, H0013: 1, H0427: 1, H0581: 1, H0421: 1, H0544: 1, H0046: 1, H0457: 1, H0150: 1, H0563: 1, H0123: 1, H0019: 1, L0471: 1, H0024: 1, H0271: 1, H0416: 1, H0428: 1, H0039: 1, L0055: 1, H0361: 1, H0598: 1, H0090: 1, H0591: 1, H0268: 1, H0623: 1, H0560: 1, S0440: 1, S0150: 1, H0641: 1, H0647: 1, H0646: 1, S0344: 1, S0002: 1, UNKWN: 1, L0763: 1, L0770: 1, L0637:		

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249	HLYDF73	566869	259	363 - 434	763		AR089: 4, AR060: 2 H0445: 1		
250	HLYEU59	582084	260	258 - 389	764		H0445: 3		
251	HLYGB19	838083	261	1863 - 1907	765		AR060: 10, AR089: 9 L0752: 10, L0471: 9, L0731: 9, H0422: 9, L0748: 6, H0556: 5, H0040: 5, L0641: 5, L0766: 5, L0439: 5, L0749: 5, H0543: 5, H0620: 4, H0264: 4, L0662: 4, L0755: 4, S0114: 3, S0360: 3, H0599: 3, H0024: 3, H0135: 3, L0747: 3, L0757: 3, L0759: 3, H0445: 3, H0423: 3, H0265: 2, S0116: 2, H0341: 2, H0013: 2, H0244: 2, H0581: 2, H0050: 2, L0456: 2, L0769: 2, L0639: 2, L0761: 2, L0649: 2, L0774: 2, L0775: 2, L0776: 2, L0384: 2, L0663: 2, L0665: 2, H0144:		

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252	HLYGE16	651339	262	406 - 627	766	Arg-23 to Trp-42, Val-52 to Pro-61.	AR060: 1 H0255: 5, L0599: 2, S0040: 1, S6024: 1, H0642: 1, L0776: 1, L0659: 1, H0144: 1, H0345: 1, L0758: 1 and H0445: 1.		
253	HLYGY91	658703	263	211 - 339	767		AR089: 1 H0692: 10, L0777: 9,		

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254	HMCAZ04	839783	264	106 - 1455	768	Pro-76 to Phe-81, Gln-95 to Pro-102, Leu-121 to Ile-128, Asp-131 to Ser-137, Thr-174 to Trp-179, Arg-217 to Lys-224, Val-257 to Asn-262, Asn-277 to Glu-283, His-325 to Asn-330, Lys-365 to Thr-377, Pro-404 to Arg-411.	AR089: 16, AR060: 9 S0132: 10, S0358: 9, S0408: 8, S0410: 8, S0002: 8, L0748: 7, H0494: 6, L0599: 6, S0142: 5, L0777: 5, S0476: 4, L0483: 4, L0775: 4, L0659: 4, H0521: 4, S0442: 3, S0278: 3, H0284: 3, H0039: 3, H0674: 3, H0591: 3, S0426: 3, L0771: 3, L0773: 3, S0374: 3, L0439: 3, H0556: 2, T0002: 2, H0584: 2, H0657: 2, S0360: 2, H0574: 2, H0486: 2, H0231: 2, H0046: 2, H0024: 2, H0286: 2, H0673: 2, S0440: 2, L0764: 2, L0766: 2, L0774: 2, L0651: 2, L0655: 2, L0664: 2, H0658: 2, H0710: 2, S0044: 2, S0404: 2, L0745: 2, L0747: 2, S0434: 2, L0581: 2, S0276: 2, H0543:		

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255	HMCAZ04	858210	265	497 - 604	769	Met-1 to Pro-7.	AR089: 16, AR060: 9 S0132: 10, S0358: 9, S0408: 8, S0410: 8, S0002:		

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256	HMCAZ04	867910	266	106 - 1455	770	Pro-76 to Phe-81, Gln-95 to Pro-102, Leu-121 to Ile-128, Asp-131 to Ser-137, Thr-174 to Trp-179, Arg-217 to Lys-224, Val-257 to Asn-262, Asn-277 to Glu-283, His-325 to Asn-330, Lys-365 to Thr-377, Pro-404 to Arg-411.	AR089: 16, AR060: 9 S0132: 10, S0358: 9, S0408: 8, S0410: 8, S0002: 8, L0748: 7, H0494: 6, L0599: 6, S0142: 5, L0777: 5, S0476: 4, L0483: 4, L0775: 4, L0659: 4, H0521: 4, S0442: 3, S0278: 3, H0284: 3, H0039: 3, H0674: 3, H0591: 3, S0426: 3, L0771: 3, L0773: 3, S0374: 3, L0439: 3, H0556: 2, T0002: 2, H0584: 2, H0657: 2, S0360: 2, H0574: 2, H0486: 2, H0231: 2, H0046: 2, H0024: 2, H0286: 2, H0673: 2, S0440: 2, L0764: 2, L0766: 2, L0774: 2, L0651: 2, L0655: 2, L0664: 2, H0658: 2, H0710: 2, S0044: 2, S0404: 2, L0745:		

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257	HMCAZ04	887445	267	498 - 605	771	Met-1 to Pro-7.	AR089: 16, AR060: 9		

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258	HMCAZ04	668249	268	97 - 204	772	Met-1 to Pro-7.	AR089: 16, AR060: 9 S0132: 10, S0358: 9, S0408: 8, S0410: 8, S0002: 8, L0748: 7, H0494: 6, L0599: 6, S0142: 5, L0777: 5, S0476: 4, L0483: 4, L0775: 4, L0659: 4, H0521: 4, S0442: 3, S0278: 3, H0284: 3, H0039: 3, H0674: 3, H0591: 3, S0426: 3, L0771: 3, L0773: 3, S0374: 3, L0439: 3, H0556: 2, T0002: 2, H0584: 2, H0657: 2, S0360: 2, H0574: 2, H0486: 2, H0231: 2, H0046: 2, H0024: 2, H0286: 2, H0673: 2, S0440: 2, L0764: 2, L0766: 2, L0774: 2, L0651: 2, L0655: 2, L0664:		

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259	HMCFH60	654853	269	211 - 357	773		AR089: 82, AR060: 48 L0659: 10, L0665: 9, L0519: 8, L0759: 8, L0776: 7, L0749: 7, L0744: 6, L0747: 6, L0758: 6, H0150: 5, L0769: 5, L0766: 5, L0748: 5, S0360: 4, S0046: 4, S0010: 4, L0662: 4, L0768: 4, L0774: 4, L0775: 4, S0406: 4, L0751: 4, L0754: 4, L0779: 4, H0549: 3, H0575: 3, H0545: 3, H0687: 3, H0428: 3, L0764: 3, L0666: 3, H0648: 3, H0436: 3, L0750: 3, H0624: 2, H0171: 2, H0295: 2, H0657: 2, S0418: 2, S0420: 2, S0356: 2, S0358: 2, S0376: 2, S0408: 2, S0222: 2, T0039: 2, H0635: 2, T0048: 2, H0421: 2, H0052: 2, H0544: 2, H0009: 2, H0620: 2, S6028: 2, T0006: 2, H0031: 2, H0038: 2, H0087: 2, T0067: 2, H0494: 2, S0440: 2, S0344: 2, L0638: 2, L0372: 2, L0641: 2, L0806: 2, L0653: 2, L0527: 2, L0809: 2, H0658: 2, H0672: 2, S0330: 2, L0741: 2, L0742: 2, L0596: 2, L0605: 2, S0194: 2, L0718: 2, H0265: 1, H0685: 1, H0713: 1, T0049: 1, H0656: 1, S0110: 1, S0282: 1, H0484: 1, H0638: 1, S0442: 1, H0637: 1, S0468:		

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260	HMDAB29	584789	270	97 - 177	774		AR089: 56, AR060: 22		

							H0346: 1 and S0330: 1.		
261	HMDAD44	566854	271	135 - 161	775		AR089: 21, AR060: 14 L0749: 3, H0346: 1, H0370: 1, H0427: 1 and L0439: 1.		
262	HMEBB82	783077	272	30 - 134	776		AR251: 32, AR309: 25, AR310: 25, AR273: 24, AR312: 23, AR052: 22, AR053: 22, AR265: 22, AR263: 17, AR213: 15, AR096: 15, AR248: 14, AR271: 12, AR253: 12, AR243: 12, AR249: 10, AR033: 9, AR186: 9, AR198: 8, AR055: 7, AR089: 7, AR246: 6, AR061: 5, AR205: 5, AR104: 4, AR194: 4, AR060: 4, AR039: 4, AR206: 3, AR244: 3, AR202: 2, AR204: 1 H0046: 19, L0766: 8, L0471: 5, H0124: 4, L0666: 4, H0521: 4, L0748: 4, L0779: 4, H0013: 3, S0214: 3, L0803: 3, H0144: 3, H0520: 3, L0777: 3, L0752: 3, L0758: 3, S0376: 2, S0360: 2, L0717: 2, H0431: 2, H0574: 2, S0346: 2, H0014: 2, S0003: 2, H0674: 2, S0306: 2, H0529: 2, L0646: 2, L0804: 2, L0776: 2, L0792: 2, L0663: 2, L0665: 2, L0438: 2, S0152: 2, S0404: 2, S3014: 2, L0755: 2, L0731: 2, L0757: 2, S0196: 2, H0543: 2,		

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263	HMEDE24	837027	273	900 - 1001	777	Asn-17 to Asn-22, Arg-27 to Lys-33.	AR039: 33, AR096: 28, AR053: 25, AR198: 23, AR271: 20, AR243: 20, AR089: 19, AR213: 18, AR205: 17, AR309: 16, AR246: 16, AR212: 15, AR197: 15, AR308: 15, AR312: 15, AR272: 14,		

							AR311: 14, AR201: 14, AR245: 14, AR207: 13, AR264: 13, AR263: 13, AR254: 12, AR060: 12, AR104: 10, AR253: 9, AR252: 9, AR250: 9, AR061: 8, AR204: 8, AR033: 7, AR055: 5 L0747: 28, L0588: 20, L0757: 19, H0251: 14, S0358: 12, S0045: 12, L0731: 12, H0412: 10, L0771: 10, L0748: 9, L0758: 9, H0506: 9, L0662: 7, H0013: 6, S0003: 6, H0551: 6, L0659: 6, L0666: 6, S0328: 6, L0750: 6, L0759: 6, L0599: 6, L0608: 6, S0360: 5, S0046: 5, H0623: 5, L0763: 5, L0764: 5, L0664: 5, L0439: 5, S0026: 5, S0408: 4, H0486: 4, H0581: 4, H0674: 4, H0529: 4, S0126: 4, S0136: 4, L0752: 4, H0556: 3, S0212: 3, S0420: 3, H0004: 3, H0266: 3, H0615: 3, H0622: 3, H0553: 3, H0591: 3, H0413: 3, L0770: 3, L0806: 3, L0776: 3, H0672: 3, L0740: 3, L0751: 3, L0749: 3, S0192: 3, H0170: 2, S0040: 2, H0657: 2, H0656: 2, S0356: 2, S0410: 2, H0393: 2, H0333: 2, H0427: 2, S0280: 2, H0156: 2, H0318: 2, H0596: 2, T0110: 2, H0545: 2, H0046: 2,		

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264	HMEDI90	840077	274	622 - 675	778	Ser-7 to Thr-13.	AR060: 5, AR089: 2 L0439: 8, L0776: 6, S0222: 2, S6028: 2, H0266: 2, L0438: 2, L0745: 2, L0756: 2, L0717: 1, S0010: 1, H0052: 1, H0194: 1, H0009: 1, T0010: 1, S0036: 1, L0789: 1, H0144: 1, S0028: 1, L0779: 1 and L0758: 1.		
265	HMELM75	587307	275	113 - 394	779		AR060: 5, AR089: 3 L0766: 8, H0542: 5, L0764: 4, H0497: 3, H0266: 3, L0749: 3, S0420: 2, H0264: 2, L0646: 2, L0768: 2, S0152: 2, L0748: 2, L0747: 2, L0758: 2, L0608: 2, L0595: 2, H0668: 2, H0667: 2, S0424: 2, H0294:		

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266	HMIAK10	562774	276	195 - 290	780		AR060: 6, AR089: 3 S6028: 1		
267	HMIBF07	603528	277	229 - 249	781		AR060: 4, AR089: 2 H0009: 1 and S6028: 1.		
268	HMICI80	827318	278	1149 - 1247	782	Gln-13 to Tyr-20.	AR060: 6, AR089: 3 L0439: 17, L0438: 3, L0415: 2, H0156: 2, S0049: 2, H0052: 2, S0388: 2, L0805: 2, L0748: 2, L0777: 2, L0592: 2, S0045: 1, S0222: 1, S0346: 1, H0563: 1, H0569: 1, S0051: 1, S6028: 1, S0036: 1, L0809: 1, L0789: 1, L0756: 1 and L0755: 1.		
269	HMICP65	847403	279	249 - 341	783		AR089: 9, AR060: 6 H0156: 5, H0650: 3, S0474: 3, L0666: 3, H0341: 2, H0393: 2, H0486: 2, H0052: 2, H0039: 2, H0135: 2, S0330: 2, L0748: 2, L0439: 2, L0757: 2, L0601: 2, H0224: 1, H0225: 1, S0134: 1, H0583: 1, H0657:		

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270	HMJAK70	610099	280	273 - 305	784		AR251: 4, AR052: 3, AR263: 3, AR265: 2, AR253: 2, AR309: 2, AR039: 2, AR096: 2, AR271: 2, AR186: 2, AR312: 1, AR053: 1, AR310: 1, AR213: 1, AR055: 1 H0391: 1		
271	HMSBE04	709672	281	295 - 378	785		AR060: 5, AR089: 2 S0002: 1		
272	HMSCL38	801919	282	120 - 227	786		AR089: 13, AR060: 7 H0204: 1, H0009: 1 and S0002: 1.		
273	HMSCR69	843059	283	107 - 1249	787	Met-1 to Val-7, Gly-15 to Tyr-22, Glu-38 to Asp-49, Gly-87 to Leu-93, Ala-138 to Gly-147, Pro-164 to Asn-170, Ser-183 to Glu-194, Arg-245 to Ser-261, Glu-280 to Asn-288,	AR089: 14, AR060: 11 L0766: 9, L0731: 7, H0457: 6, L0777: 5, S0358: 4, S0354: 3, H0038: 3, L0439: 3, L0747: 3, L0588: 3, L0581: 3, H0653: 3, H0265: 2, S0222: 2, H0013: 2, H0135: 2, H0591: 2, H0616: 2, H0509: 2, S0002:		

						Arg-295 to Asp-315, Val-329 to Glu-343, Leu-367 to Pro-380.	2, L0770: 2, L0769: 2, L0764: 2, L0775: 2, L0659: 2, H0670: 2, L0748: 2, L0740: 2, L0749: 2, L0750: 2, L0780: 2, H0667: 2, H0543: 2, S0134: 1, H0341: 1, S0212: 1, H0402: 1, S0442: 1, S0376: 1, S0444: 1, S0408: 1, S0045: 1, H0619: 1, H0645: 1, H0411: 1, H0370: 1, H0392: 1, H0643: 1, H0632: 1, H0156: 1, H0599: 1, H0098: 1, S0010: 1, S0665: 1, S0346: 1, H0581: 1, T0110: 1, L0040: 1, H0545: 1, L0471: 1, H0355: 1, H0179: 1, S0316: 1, S0003: 1, S0214: 1, H0615: 1, H0031: 1, H0553: 1, H0035: 1, H0068: 1, H0634: 1, H0063: 1, H0551: 1, T0067: 1, H0494: 1, T0090: 1, S0144: 1, H0529: 1, L0520: 1, L0763: 1, L0761: 1, L0803: 1, L0384: 1, L0530: 1, L0666: 1, L0663: 1, L0664: 1, L0665: 1, H0144: 1, H0593: 1, S0126: 1, H0682: 1, H0435: 1, H0658: 1, H0648: 1, H0521: 1, S0188: 1, H0436: 1, H0345: 1, S3012: 1, S3014: 1, L0744: 1, L0786: 1, L0752: 1, L0755: 1, H0343: 1, S0436: 1, L0591: 1, L0608: 1, L0366: 1 and S0242: 1.		
274	HMSHC86	840402	284	37 - 318	788	Arg-32 to Gln-37,	S0002: 4		

						Arg-68 to Phe-73.			
275	HMSHU20	847410	285	50 - 391	789	Ser-2 to Trp-7, Gln-44 to Lys-53, Ser-80 to Gly-88.	AR248: 12, AR253: 10, AR089: 9, AR249: 8, AR310: 7, AR251: 7, AR312: 7, AR060: 7, AR265: 6, AR309: 6, AR271: 6, AR273: 6, AR096: 5, AR055: 5, AR213: 4, AR052: 4, AR053: 4, AR061: 4, AR033: 4, AR186: 4, AR039: 4, AR104: 3, AR205: 3, AR243: 3, AR246: 3, AR202: 3, AR206: 1, AR263: 1, AR194: 1 S0278: 8, S0344: 5, L0740: 3, H0250: 2, S0142: 2, L0774: 2, L0749: 2, S0116: 1, H0581: 1, H0031: 1, H0063: 1, S0144: 1, S0002: 1, L0800: 1, L0744: 1, L0777: 1 and H0653: 1.		
276	HMSHY25	886183	286	656 - 763	790	His-1 to Gln-6, Glu-28 to Pro-35.	AR060: 4, AR089: 2 S0002: 1 and S0426: 1.		
277	HMTAB77	847411	287	769 - 915	791	Gly-3 to Thr-8.	AR245: 4, AR308: 3, AR243: 3, AR253: 3, AR205: 3, AR254: 3, AR104: 3, AR039: 2, AR312: 2, AR201: 2, AR089: 2, AR212: 2, AR096: 2, AR213: 1, AR264: 1, AR060: 1, AR263: 1 H0436: 65, L0747: 25, H0521: 12, L0754: 11, L0471: 7, L0439: 7, S0358: 6, S0360: 5, L0809: 5,		

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							L0594: 1, S0196: 1 and S0412: 1.		
278	HMUAE26	747403	288	710 - 802	792	Ser-25 to Arg-30.	AR089: 13, AR060: 9 H0305: 3, L0743: 3, H0620: 2, H0617: 2, L0770: 2, L0794: 2, L0384: 2, L0666: 2, L0777: 2, L0591: 2, L0595: 2, H0556: 1, S0358: 1, S0045: 1, H0497: 1, H0493: 1, H0618: 1, H0318: 1, H0581: 1, H0012: 1, H0014: 1, T0010: 1, H0292: 1, S0250: 1, H0615: 1, H0428: 1, H0087: 1, L0351: 1, H0132: 1, H0529: 1, L0761: 1, L0644: 1, L0375: 1, L0524: 1, L0653: 1, L0655: 1, L0656: 1, L0659: 1, L0809: 1, L0791: 1, H0520: 1, H0547: 1, H0690: 1, H0682: 1, H0670: 1, H0672: 1, H0555: 1, L0749: 1, L0779: 1, L0780: 1, L0731: 1, H0445: 1, H0653: 1, S0192: 1 and H0542: 1.		
279	HMUAN45	833072	289	239 - 922	793	Pro-33 to Gly-45, Cys-121 to Gly-131, Ala-155 to His-166, Gly-180 to Gln-185.	AR311: 142, AR272: 136, AR308: 126, AR104: 116, AR264: 98, AR212: 96, AR061: 75, AR055: 74, AR060: 74, AR201: 60, AR033: 56, AR263: 53, AR312: 34, AR197: 33, AR089: 33, AR250: 27, AR207: 26, AR096: 26, AR309: 25, AR053: 25, AR252: 24, AR213: 20, AR205: 15, AR245: 14,		

							AR204: 12, AR246: 11, AR254: 11, AR198: 11, AR271: 9, AR253: 9, AR039: 9, AR243: 4, AR310: 1 H0271: 5, H0083: 3, L0794: 3, H0656: 2, H0457: 2, H0179: 2, L0791: 2, H0521: 2, L0744: 2, H0707: 2, H0265: 1, H0556: 1, H0657: 1, H0449: 1, H0580: 1, S0046: 1, H0411: 1, H0437: 1, H0333: 1, H0486: 1, H0250: 1, S6028: 1, H0615: 1, H0628: 1, L0055: 1, H0040: 1, H0634: 1, S0144: 1, H0529: 1, L0769: 1, L0768: 1, L0766: 1, L0803: 1, L0653: 1, L0793: 1, L0666: 1, S0052: 1, H0689: 1, H0522: 1, H0436: 1, L0743: 1, L0749: 1, L0779: 1, H0445: 1 and H0542: 1.		
280	HMVBC31	825598	290	1437 - 1559	794	Ser-33 to Tyr-39.	AR060: 2, AR089: 1 L0748: 10, H0556: 5, L0438: 4, L0754: 4, H0050: 3, H0040: 3, L0769: 3, L0806: 3, L0439: 3, L0757: 3, L0759: 3, L0601: 3, T0002: 2, S0418: 2, S0358: 2, S0360: 2, H0580: 2, H0549: 2, H0644: 2, H0529: 2, L0773: 2, L0768: 2, L0766: 2, L0776: 2, L0783: 2, L0663: 2, L0740: 2, L0747: 2, L0749: 2, S0212: 1, H0484: 1, H0661: 1,		

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281	HMVDU15	801969	291	274 - 351	795		AR089: 13, AR060: 9 H0436: 20, L0748: 6, L0750: 6, H0100: 3, H0144: 3, L0755: 3, H0657: 2, H0009: 2, L0804: 2, L0666: 2, S0380: 2, L0740: 2, L0752: 2, L0731: 2, L0759: 2, H0713: 1, H0341: 1, S0212: 1, H0661: 1, H0450: 1, H0125: 1, S0408: 1, H0208: 1, S0046: 1, S0222: 1, H0486: 1, H0545: 1, H0024: 1, H0622: 1, T0023: 1, H0031: 1, H0032: 1, H0316: 1, T0067: 1, H0561: 1, H0132: 1, L0763: 1, L0769: 1, L0638: 1, L0772: 1, L0764: 1, L0765: 1, L0771: 1, L0794: 1, L0803:		

							1, L0774: 1, L0655: 1, L0382: 1, H0689: 1, H0435: 1, S0330: 1, H0696: 1, L0747: 1, L0758: 1, L0608: 1 and S0011: 1.		
282	HMWBL03	822861	292	137 - 1327	796	Met-1 to Leu-11, Val-13 to Lys-19, Thr-30 to Asp-39, Thr-49 to Gly-68, Ala-78 to Gly-111, Pro-140 to Thr-163, Ser-169 to Ser-185, Glu-197 to Lys-204, Lys-210 to Asp-215, Glu-220 to Ser-231, Ser-255 to Leu-266, Thr-269 to Asp-288, Cys-300 to Val-309, Phe-331 to Cys-339, Ser-362 to Ile-373.	AR089: 5, AR060: 4 L0766: 7, H0341: 5, S0356: 5, S0422: 5, H0543: 5, H0591: 4, H0656: 3, S0354: 3, H0013: 3, T0042: 3, H0659: 3, L0748: 3, L0750: 3, L0777: 3, S0418: 2, S0444: 2, L0471: 2, H0040: 2, H0063: 2, H0494: 2, L0646: 2, L0626: 2, L0806: 2, L0655: 2, L0663: 2, S0374: 2, H0547: 2, S0206: 2, L0756: 2, L0588: 2, H0624: 1, H0171: 1, H0556: 1, S0342: 1, H0650: 1, S0442: 1, S0360: 1, S0410: 1, T0008: 1, S0046: 1, H0257: 1, H0263: 1, L0738: 1, H0046: 1, L0157: 1, H0039: 1, H0068: 1, H0135: 1, H0090: 1, T0041: 1, H0560: 1, S0440: 1, H0529: 1, L0640: 1, L0771: 1, L0768: 1, L0634: 1, L0529: 1, L0666: 1, L0665: 1, H0520: 1, H0519: 1, S0328: 1, S0152: 1, S0406: 1, L0751: 1, L0747: 1, L0759: 1, S0436: 1, L0591: 1, L0608: 1, H0542: 1 and H0423: 1.		
283	HMWJF53	758158	293	1015 - 1131	797		H0255: 7, H0318: 5, H0620: 5, L0754: 5, L0766:		

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284	HNEAK81	722235	294	288 - 359	798		H0179: 1		
285	HNECL22	799541	295	472 - 576	799		AR089: 7, AR060: 5 L0748: 47, L0766: 20, L0754: 18, L0777: 12, L0750: 10, L0761: 9, S0116: 8, H0179: 8, L0744: 8, H0457: 7, L0794: 7, H0144: 7, S0356: 6, L0438: 6, L0743: 6, L0751: 6, L0745: 6, L0779: 6, H0271: 5, H0305: 4, H0421: 4, H0050: 4, L0769: 4, L0771: 4, L0803: 4, L0805: 4, L0776: 4, S0428: 4, L0758: 4, L0603: 4, H0393: 3, H0549: 3, H0497: 3, H0013: 3, H0599: 3, H0591: 3, L0800: 3, L0773: 3, L0666: 3, S0052: 3, H0436: 3, S0028: 3, L0749: 3, L0759: 3, H0542: 3, H0402: 2, S0354: 2, S0045: 2, H0575: 2, H0590: 2, H0024: 2, H0031: 2, H0553: 2, H0674: 2, H0087: 2, H0494: 2, L0774: 2, L0659: 2, L0809: 2, L0792: 2, L0664: 2, H0518: 2, L0747: 2, L0752: 2, L0599: 2, H0171: 1, H0583:		

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286	HNECW49	639117	296	316 - 489	800	Cys-21 to Trp-26, Val-37 to Ser-53.	AR060: 7, AR089: 4 H0179: 2 and H0402: 1.		
287	HNEDH88	815675	297	70 - 171	801	Lys-22 to Gly-27.	AR060: 2, AR089: 1 H0179: 1		
288	HNFAC50	815676	298	676 - 774	802	Lys-7 to Glu-18.	AR060: 5, AR089: 4		

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289	HNFGR08	825417	299	314 - 445	803		AR060: 4, AR089: 2 H0271: 1		
290	HNFHF34	722237	300	178 - 270	804		AR060: 21, AR089: 17 L0803: 12, H0581: 8, S0358: 6, H0046: 6, H0428: 6, S0356: 5, S0007: 5, H0031: 4, L0666: 4, L0665: 4, H0271: 3, H0038: 3, L0794: 3, L0804: 3, H0693: 3, S0406: 3, L0756: 3, L0758: 3, L0592: 3, S0116: 2, S0444: 2, H0431: 2, H0586: 2, H0486: 2, L0471: 2, H0615: 2, H0039: 2, S0036: 2, H0616: 2, S0422: 2, H0529: 2, L0770: 2, L0521: 2, L0662: 2, L0776: 2, L0787: 2, L0663: 2, L0438: 2, H0670: 2, H0660: 2, S0328: 2, S0330: 2, H0436: 2, L0748: 2, L0755: 2, L0485: 2, L0599: 2, S0192: 2, H0423: 2, H0624: 1, S0342: 1, S0114: 1,		

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291	HNGAK51	603910	301	248 - 346	805		AR089: 26, AR060: 14 S0052: 1		
292	HNGAM58	688114	302	68 - 412	806	Trp-31 to Arg-39, Ala-50 to Trp-57,	AR089: 35, AR060: 16 S0052: 1		

						Lys-83 to Leu-93, Pro-103 to Gly-113.			
293	HNGBH53	532614	303	47 - 187	807	Asn-14 to Glu-24.	AR060: 7, AR089: 4 S0052: 1		
294	HNGDQ38	825389	304	205 - 384	808	Pro-28 to Arg-33.	S0052: 1		
295	HNGDX18	1145071	305	237 - 965	809	Ser-21 to Ser-39, Gln-45 to Gln-61, Cys-124 to Ser-139.	AR251: 5, AR060: 4, AR052: 4, AR254: 3, AR055: 3, AR312: 3, AR272: 3, AR271: 3, AR244: 3, AR061: 3, AR198: 3, AR053: 3, AR089: 3, AR201: 3, AR264: 3, AR096: 2, AR309: 2, AR249: 2, AR311: 2, AR310: 2, AR033: 2, AR265: 2, AR197: 2, AR253: 2, AR104: 2, AR213: 1, AR308: 1, AR273: 1, AR194: 1, AR039: 1, AR252: 1, AR205: 1 S0052: 4, L0766: 3, H0255: 2, H0402: 2, H0620: 2, H0024: 2, L0754: 2, H0656: 1, H0484: 1, H0254: 1, S0360: 1, H0208: 1, H0393: 1, S0222: 1, H0618: 1, H0194: 1, H0457: 1, H0123: 1, H0051: 1, H0271: 1, H0182: 1, H0063: 1, H0087: 1, L0351: 1, T0042: 1, S0448: 1, L0761: 1, L0378: 1, L0805: 1, L0655: 1, H0539: 1, S0188: 1, S0146: 1, H0543: 1 and H0423: 1.		
		866177	513	231 - 629	1017	Ser-21 to Ser-39, Gln-45 to Gln-61, Cys-124 to Gly-130.			

296	HNGDY34	566863	306	73 - 126	810		AR251: 7, AR060: 6, AR246: 6, AR206: 3, AR205: 3, AR309: 3, AR089: 3, AR055: 3, AR052: 3, AR312: 3, AR053: 3, AR243: 2, AR186: 2, AR202: 2, AR061: 2, AR033: 2, AR213: 2, AR265: 2, AR198: 2, AR244: 2, AR253: 2, AR310: 2, AR096: 2, AR039: 1, AR194: 1, AR104: 1 S0052: 1		
297	HNGEA34	815678	307	58 - 192	811	His-26 to Ser-32.	AR060: 5, AR089: 3 H0393: 1 and S0052: 1.		
298	HNGEQ75	535723	308	30 - 98	812		H0052: 2, H0406: 1, S0052: 1 and L0439: 1.		
299	HNGGA68	638116	309	184 - 282	813	Ala-8 to Gly-20.	AR060: 6, AR089: 3 H0419: 1, H0305: 1 and S0052: 1.		
300	HNGGP65	597449	310	181 - 387	814		AR089: 9, AR060: 8 S0052: 1		
301	HNGHZ69	899289	311	25 - 54	815		H0445: 2 and S0052: 1.		
302	HNGIV64	561572	312	221 - 247	816		AR060: 8, AR089: 6 S0052: 1		
303	HNGJB41	852178	313	252 - 473	817		AR060: 6, AR089: 3 S0052: 1		
304	HNGKT41	836061	314	415 - 552	818		AR060: 6, AR089: 3 S0428: 1		
305	HNGMW45	838613	315	452 - 583	819		S0428: 1		
306	HNGNK44	834949	316	611 - 835	820	Ser-41 to Ser-48, Arg-61 to Trp-68.	AR060: 5, AR089: 2 L0581: 2 and S0428: 1.		
307	HNGNO53	836063	317	467 - 571	821		AR060: 6, AR089: 4 S0428: 2 and L0439: 1.		
308	HNGPJ25	834942	318	544 - 621	822		AR060: 7, AR089: 3 H0251: 8, H0624: 4, H0171: 1 and S0428: 1.		

309	HNHEN82	836157	319	78 - 131	823		AR060: 4, AR089: 2 S0053: 1		
310	HNHFE71	834487	320	598 - 663	824		AR060: 8, AR089: 4 S0053: 1		
311	HNHGK22	597451	321	239 - 433	825		AR060: 7, AR089: 4 S0053: 2		
312	HNHHB10	634589	322	215 - 394	826	Pro-40 to Tyr-46.	AR089: 20, AR264: 11, AR060: 11, AR096: 8, AR312: 7, AR212: 7, AR052: 6, AR213: 6, AR263: 5, AR311: 5, AR053: 5, AR198: 5, AR308: 5, AR309: 5, AR272: 5, AR250: 5, AR039: 4, AR104: 4, AR244: 4, AR265: 4, AR271: 4, AR197: 4, AR273: 4, AR243: 4, AR033: 4, AR207: 4, AR254: 4, AR248: 3, AR204: 3, AR310: 3, AR249: 3, AR186: 3, AR202: 3, AR201: 3, AR253: 3, AR205: 2, AR246: 2, AR206: 2, AR251: 1, AR245: 1, AR252: 1, AR055: 1, AR061: 1 H0059: 1 and S0053: 1.		
313	HNHKS19	778392	323	192 - 317	827	Pro-23 to Gln-34.	L0789: 2, H0616: 1, S0216: 1 and L0758: 1.		
314	HNTBT17	855957	324	91 - 111	828		AR089: 4 H0436: 8, L0666: 5, L0748: 5, L0766: 4, L0803: 4, H0670: 4, L0740: 4, L0755: 4, L0759: 4, H0170: 3, S0002: 3, L0665: 3, L0439: 3, L0745: 3, L0731:		

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315	HNTMH79	801921	325	48 - 164	829		AR089: 14, AR060: 5 L0748: 16, L0809: 10, L0747: 10, L0777: 7, L0717: 6, L0766: 6, L0794: 5, L0745: 5, S0360: 4, H0457: 4, L0771: 4, L0749: 4,		

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316	HOABP31	835084	326	148 - 519	830	Cys-22 to Ser-27.	AR089: 39, AR060: 20		
317	HOABP31	868327	327	148 - 522	831	Cys-22 to Ser-27.	AR089: 39, AR060: 20		
318	HOACG07	792928	328	778 - 1149	832	Pro-32 to Ser-42, Cys-51 to Gly-83,	AR202: 138, AR194: 120, AR198: 98, AR244: 88,		

						Gly-87 to Ser-93.	AR246: 86, AR243: 85, AR205: 85, AR039: 78, AR204: 73, AR265: 70, AR206: 63, AR310: 59, AR263: 57, AR271: 57, AR273: 54, AR104: 50, AR053: 50, AR052: 49, AR033: 48, AR096: 46, AR213: 45, AR312: 43, AR309: 42, AR055: 37, AR251: 37, AR089: 36, AR186: 34, AR253: 24, AR060: 24, AR061: 23, AR248: 20, AR249: 13 L0748: 7, H0265: 5, H0585: 5, H0677: 5, H0427: 4, L0749: 4, L0731: 4, H0618: 3, H0617: 3, L0769: 3, L0800: 3, H0556: 2, H0141: 2, H0716: 2, H0587: 2, S0049: 2, H0052: 2, H0123: 2, H0266: 2, H0135: 2, H0412: 2, S0142: 2, L0761: 2, L0794: 2, L0649: 2, L0657: 2, L0659: 2, L0663: 2, L0665: 2, H0689: 2, H0506: 2, H0713: 1, H0657: 1, H0483: 1, H0255: 1, H0661: 1, H0638: 1, S0356: 1, S0442: 1, S0360: 1, H0580: 1, H0722: 1, S0046: 1, S0278: 1, H0441: 1, H0438: 1, H0559: 1, H0013: 1, H0253: 1, H0546: 1, H0545: 1, H0041: 1, H0009: 1, H0563: 1, S0388: 1, S0051: 1, H0292: 1, H0252: 1, H0615: 1, H0039:		

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319	HODAG07	655356	329	43 - 174	833	Tyr-37 to Leu-43.	AR089: 13, AR060: 10 H0328: 1 and L0748: 1.		
320	HODBB70	520196	330	173 - 256	834		AR060: 5, AR089: 3 H0328: 1, L0789: 1, L0742: 1 and L0439: 1.		
321	HODBV05	825283	331	101 - 202	835		AR060: 8, AR089: 6 L0766: 2, L0439: 2, H0171: 1, H0346: 1, H0549: 1, H0052: 1, H0328: 1, H0553: 1, H0038: 1, H0538: 1, L0792: 1, H0519: 1, H0555: 1, L0779: 1 and L0758: 1.		
322	HODCZ32	836069	332	248 - 280	836		AR089: 28, AR060: 14 H0328: 1		
323	HOEBK60	789396	333	1714 - 1845	837	Lys-5 to Thr-10, Gln-36 to Gly-43.	AR089: 8, AR060: 7 L0731: 7, L0605: 6, L0766: 4, L0655: 4, L0659: 4, L0756: 4, L0803: 3, H0648: 3, L0777: 3, S0358: 2,		

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324	HOFAA78	836646	334	48 - 263	838	Trp-1 to Arg-7, Pro-65 to Gly-70.	H0414: 1		
325	HOFNB74	762821	335	138 - 257	839	Ser-30 to Ser-36.	AR089: 7, AR060: 5 H0415: 1		
326	HOFNU55	897611	336	230 - 385	840		AR089: 30, AR060: 18 H0415: 2		
327	HOGBF01	772573	337	309 - 371	841		H0435: 1		
328	HORBS82	638293	338	21 - 140	842	Gly-30 to Ser-35.	L0809: 2, S0360: 1, L0623: 1, H0122: 1, H0706: 1, H0041: 1, H0095: 1, H0292:		

							1, H0424: 1, L0794: 1, L0787: 1, L0663: 1, H0435: 1, L0743: 1, L0747: 1 and L0731: 1.		
329	HORBV76	839270	339	183 - 779	843	Gly-25 to Leu-38, Asp-56 to Gly-65, Ser-115 to Lys-121.	AR060: 7, AR089: 4 S0278: 2, L0608: 2, H0686: 1, H0266: 1, H0292: 1, H0031: 1, H0560: 1, L0065: 1, S0344: 1, L0638: 1, L0662: 1, L0794: 1, L0803: 1, L0659: 1, L0665: 1, L0747: 1, L0749: 1 and L0780: 1.		
330	HOSDO75	862049	340	88 - 174	844	Phe-2 to Ser-8, Phe-21 to Ser-26.	AR060: 6, AR089: 3 L0766: 6, L0748: 6, L0740: 6, L0776: 4, S0358: 2, S0003: 2, S0344: 2, L0638: 2, L0805: 2, L0438: 2, S0380: 2, H0521: 2, L0754: 2, L0747: 2, L0752: 2, L0755: 2, L0362: 2, H0624: 1, L0005: 1, S0045: 1, S0046: 1, H0575: 1, S0010: 1, H0266: 1, H0269: 1, T0042: 1, S0150: 1, L0369: 1, L0770: 1, L0761: 1, L0794: 1, L0656: 1, L0787: 1, L0789: 1, L0665: 1, H0670: 1, H0660: 1, L0439: 1, L0749: 1, L0779: 1, L0777: 1, L0759: 1, H0445: 1, H0343: 1, L0591: 1, S0192: 1 and H0543: 1.		
331	HOSEC25	688055	341	17 - 91	845	Thr-19 to Cys-24.	AR089: 31, AR060: 13 S0214: 1, L0776: 1, S0152: 1 and H0521: 1.		
332	HOSEI81	562778	342	203 - 454	846	Lys-70 to Asn-76.	AR060: 5, AR089: 3 L0777: 2, S0214: 1 and		

							H0539: 1.		
333	HOSEJ94	795132	343	848 - 934	847		AR089: 16, AR060: 12 H0547: 9, L0731: 9, H0038: 7, S0003: 6, L0766: 6, S0126: 5, L0758: 5, H0657: 4, L0598: 4, L0774: 4, L0439: 4, L0752: 4, H0624: 3, H0486: 3, H0040: 3, L0775: 3, L0438: 3, H0539: 3, S0152: 3, L0745: 3, L0594: 3, L0362: 3, H0170: 2, S0040: 2, H0650: 2, H0656: 2, S0116: 2, S0046: 2, H0497: 2, H0575: 2, H0036: 2, H0622: 2, H0591: 2, H0623: 2, S0440: 2, H0641: 2, S0344: 2, S0210: 2, S0426: 2, H0529: 2, L0770: 2, L0651: 2, L0555: 2, L0776: 2, L0655: 2, L0665: 2, H0435: 2, S0330: 2, L0740: 2, L0777: 2, L0587: 2, S0412: 2, H0394: 1, H0556: 1, S0342: 1, S0134: 1, S0218: 1, L0002: 1, H0663: 1, S0358: 1, S0360: 1, S0045: 1, S0476: 1, H0550: 1, S0222: 1, H0441: 1, H0415: 1, H0574: 1, H0635: 1, H0590: 1, H0318: 1, S0474: 1, H0251: 1, T0115: 1, H0563: 1, H0024: 1, H0014: 1, L0163: 1, H0083: 1, H0594: 1, S0214: 1, H0328: 1, H0644: 1, L0055: 1, H0673: 1, H0674: 1, H0616: 1, H0551: 1, H0412: 1, H0413:		

							1, T0042: 1, H0494: 1, H0561: 1, S0438: 1, S0422: 1, UNKWN: 1, L0520: 1, L0625: 1, L0637: 1, L0627: 1, L0772: 1, L0764: 1, L0773: 1, L0521: 1, L0662: 1, L0768: 1, L0522: 1, L0650: 1, L0375: 1, L0806: 1, L0656: 1, L0790: 1, L4501: 1, L0666: 1, L0663: 1, L0664: 1, S0216: 1, S0374: 1, H0659: 1, H0660: 1, H0672: 1, S0328: 1, H0696: 1, H0478: 1, S3012: 1, S0027: 1, S0028: 1, L0750: 1, L0753: 1, L0759: 1, H0445: 1, L0596: 1, L0592: 1, L0608: 1, L0361: 1, S0192: 1, H0423: 1 and L0697: 1.		
334	HOUCA21	655359	344	200 - 301	848		S0040: 1, T0042: 1 and S0292: 1.		
335	HOUDE92	580866	345	70 - 336	849	Pro-22 to His-31, Ser-80 to Gln-88.	H0052: 17, L0745: 11, L0748: 10, H0547: 7, L0439: 7, L0755: 6, L0771: 5, L0774: 5, L0662: 4, L0746: 4, L0777: 4, L0163: 3, H0059: 3, H0100: 3, L0775: 3, L0741: 3, H0261: 2, H0333: 2, H0194: 2, H0545: 2, H0012:.2, H0617: 2, H0135: 2, L0770: 2, L0665: 2, L0438: 2, H0520: 2, L0747: 2, L0752: 2, L0753: 2, S0040: 1, L0717: 1, H0437: 1, H0550: 1, S6016: 1, H0497: 1, H0574: 1, H0599: 1, H0575: 1,		

							H0618: 1, H0253: 1, H0041: 1, H0620: 1, H0373: 1, H0188: 1, H0124: 1, H0068: 1, H0040: 1, H0561: 1, S0448: 1, S0210: 1, L0763: 1, L0644: 1, L0767: 1, L0768: 1, L0375: 1, L0651: 1, L0659: 1, L0540: 1, H0144: 1, H0593: 1, S0126: 1, H0539: 1, S0152: 1, H0694: 1, S0390: 1, S0028: 1, L0749: 1, L0786: 1, L0731: 1, L0757: 1, L0758: 1, L0592: 1 and S0276: 1.		
336	HOUDR07	745404	346	170 - 367	850	Pro-27 to Arg-34.	AR197: 30, AR207: 25, AR263: 18, AR311: 17, AR039: 15, AR271: 15, AR309: 15, AR061: 15, AR245: 15, AR201: 14, AR308: 13, AR213: 13, AR198: 13, AR264: 12, AR212: 12, AR205: 11, AR312: 11, AR243: 11, AR246: 11, AR053: 10, AR204: 10, AR089: 10, AR055: 9, AR272: 9, AR033: 9, AR254: 8, AR096: 7, AR252: 7, AR253: 7, AR104: 7, AR250: 6, AR060: 6 S0212: 8, H0599: 4, H0713: 3, S0312: 3, H0622: 3, H0628: 3, S0040: 2, H0717: 2, S0132: 2, H0587: 2, H0635: 2, T0010: 2, H0266: 2, S0314: 2, H0553: 2, L0740: 2, L0755: 2, L0757: 2, L0603: 2, H0668:		

							2, S0116: 1, H0661: 1, H0728: 1, S0045: 1, S0046: 1, S0476: 1, H0456: 1, H0549: 1, H0431: 1, H0592: 1, H0632: 1, H0486: 1, H0427: 1, H0706: 1, H0590: 1, H0618: 1, H0705: 1, S0049: 1, H0024: 1, N0007: 1, H0510: 1, H0594: 1, H0124: 1, H0163: 1, H0551: 1, S0352: 1, S0438: 1, H0509: 1, H0647: 1, H0519: 1, H0555: 1, S0390: 1, S0028: 1, L0439: 1, L0731: 1, S0434: 1 and S0276: 1.		
337	HOUED72	858547	347	144 - 179	851		AR089: 69, AR060: 43 S0040: 1		
338	HOUFS04	771564	348	520 - 738	852		AR089: 14, AR060: 10 L0745: 16, S0414: 6, H0351: 5, H0013: 5, L0803: 5, H0144: 4, H0413: 3, H0519: 3, L0754: 3, L0759: 3, S0242: 3, H0624: 2, H0580: 2, S0045: 2, H0421: 2, H0375: 2, H0428: 2, H0553: 2, L0598: 2, L0775: 2, L0666: 2, L0664: 2, L0665: 2, H0520: 2, H0547: 2, S0126: 2, H0672: 2, S0380: 2, H0521: 2, L0743: 2, L0744: 2, L0605: 2, H0171: 1, H0556: 1, H0685: 1, S0040: 1, S0114: 1, H0657: 1, S0212: 1, S0444: 1, S0132: 1, H0619: 1, H0411: 1, S0278: 1, H0549: 1, S0222: 1, H0486: 1, S0280: 1, H0575: 1, L0105:		

							1, H0581: 1, H0052: 1, H0545: 1, H0594: 1, S6028: 1, H0687: 1, S0250: 1, H0031: 1, S0364: 1, L0455: 1, H0124: 1, H0591: 1, H0038: 1, S0450: 1, L0763: 1, L0638: 1, L0637: 1, L0662: 1, L0794: 1, L0649: 1, L0654: 1, L0382: 1, L0792: 1, H0435: 1, H0518: 1, H0696: 1, H0436: 1, S0432: 1, S0390: 1, S0037: 1, S3014: 1, S0028: 1, S0124: 1, L0751: 1, L0756: 1, L0779: 1, L0777: 1, L0780: 1, L0752: 1, L0755: 1, S0031: 1, L0599: 1, S0196: 1, H0423: 1 and H0422: 1.		
339	HOUHI25	888279	349	188 - 250	853		AR060: 4, AR089: 3 S0436: 7, H0551: 6, H0599: 5, L0756: 5, L0758: 5, L0759: 5, L0754: 4, L0747: 4, H0545: 3, S0003: 3, L0375: 3, H0144: 3, L0755: 3, S0442: 2, S0045: 2, H0013: 2, L0471: 2, H0373: 2, H0051: 2, H0560: 2, L0768: 2, L0803: 2, L0659: 2, L0438: 2, L0439: 2, L0740: 2, L0750: 2, L0779: 2, L0757: 2, S0242: 2, H0624: 1, S0040: 1, S0342: 1, S0116: 1, S0212: 1, S0444: 1, H0357: 1, H0587: 1, L0021: 1, S0010: 1, L0105: 1, S0474: 1, H0544: 1, H0046: 1, S0051:		

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340	HOVBD85	827362	350	252 - 332	854		AR060: 1 H0252: 1 and H0428: 1.		
341	HPCAB41	758003	351	184 - 261	855		AR060: 2, AR089: 2 L0754: 4, L0471: 1, L0662: 1, L0766: 1, H0521: 1, S0146: 1, L0758: 1 and H0422: 1.		
342	HPCAL26	762822	352	1021 - 1113	856		L0659: 11, S0126: 11, L0731: 11, S0192: 11, L0666: 9, L0777: 7, T0049: 5, S0358: 5, L0771: 5, L0757: 5, S0360: 4, S0440: 4, L0740: 4, L0758: 4, S0212: 3, S0356: 3, S0046: 3, H0369: 3, H0545: 3, L0662: 3, L0774: 3, L0809: 3, H0519: 3, L0752: 3, S0011: 3, H0295: 2, H0662: 2, S0468: 2, H0012: 2, H0024: 2, H0356: 2, H0616: 2, H0268: 2, H0412: 2, L0646: 2, L0803: 2, S0013: 2, L0754: 2, L0747: 2, L0759: 2, S0040: 1, S0418: 1, S0442: 1, S0376: 1, H0676: 1, L0717: 1, H0550: 1, S0222: 1, H0574: 1, L0021: 1, H0575: 1, H0036: 1, H0590: 1, H0618: 1,		

							T0048: 1, H0309: 1, H0596: 1, T0110: 1, H0546: 1, H0046: 1, H0123: 1, H0014: 1, S0003: 1, S0022: 1, H0428: 1, H0622: 1, H0031: 1, H0673: 1, L0455: 1, H0316: 1, H0598: 1, H0163: 1, H0038: 1, H0433: 1, H0413: 1, T0069: 1, S0438: 1, H0633: 1, H0647: 1, S0210: 1, L0770: 1, L0769: 1, L0768: 1, L0794: 1, L0519: 1, L0789: 1, L0790: 1, L0664: 1, L0665: 1, H0144: 1, S0330: 1, S0136: 1, H0696: 1, S3014: 1, S0206: 1, L0751: 1, L0749: 1, L0756: 1, L0779: 1, S0031: 1, S0242: 1, S0194: 1 and S0276: 1.		
343	HPEAD23	773409	353	188 - 469	857	Ala-54 to Lys-59.	AR089: 38, AR060: 30 H0585: 18, L0771: 4, L0775: 3, L0779: 3, S0408: 2, L0768: 2, S0374: 2, H0341: 1, S0358: 1, S0360: 1, H0574: 1, H0559: 1, H0156: 1, H0253: 1, S0182: 1, H0318: 1, H0545: 1, H0083: 1, H0165: 1, H0063: 1, S0440: 1, L0774: 1, L0776: 1, L0526: 1, H0648: 1, H0696: 1, S0406: 1, L0748: 1, L0749: 1, L0750: 1, L0752: 1 and S0031: 1.		
344	HPFBA54	635539	354	258 - 395	858		H0169: 1, H0130: 1 and L0606: 1.		
345	HPFCI36	855966	355	94 - 153	859		AR089: 8, AR060: 6 L0591: 4, L0754: 3,		

							H0450: 2, H0486: 2, H0046: 2, S0003: 2, H0494: 2, L0659: 2, S0126: 2, H0659: 2, L0750: 2, L0601: 2, H0170: 1, H0556: 1, H0657: 1, S0420: 1, S0354: 1, H0455: 1, H0403: 1, H0600: 1, H0013: 1, H0156: 1, H0599: 1, H0082: 1, S0214: 1, H0622: 1, H0031: 1, H0673: 1, H0169: 1, H0090: 1, H0038: 1, H0022: 1, H0560: 1, S0422: 1, L0643: 1, L0771: 1, L0773: 1, L0655: 1, L0807: 1, L0792: 1, L0665: 1, S0378: 1, H0518: 1, S0152: 1, H0521: 1, L0748: 1, L0749: 1, L0757: 1, L0759: 1, S0434: 1, L0596: 1, L0605: 1 and H0653: 1.		
346	HPFDI37	862056	356	38 - 91	860		AR060: 4, AR089: 2 L0771: 13, L0752: 12, L0748: 9, L0731: 7, S0360: 6, L0769: 6, S0358: 5, H0318: 5, L0770: 5, L0747: 5, L0758: 5, L0599: 5, H0140: 4, H0545: 4, H0673: 4, L0774: 4, L0655: 4, L0659: 4, L0664: 4, L0665: 4, H0659: 4, H0648: 4, L0740: 4, L0754: 4, L0588: 4, H0662: 3, H0169: 3, H0413: 3, L0638: 3, L0775: 3, L0783: 3, L0666: 3, L0663: 3, H0660: 3, H0521: 3, L0749: 3, L0750: 3, L0757: 3, H0543: 3, H0170:		

							2, S0110: 2, H0574: 2, H0581: 2, H0535: 2, L0065: 2, H0647: 2, S0344: 2, L0763: 2, L0764: 2, L0662: 2, L0767: 2, L0803: 2, L0806: 2, L0776: 2, S0374: 2, S0328: 2, S0380: 2, H0576: 2, S0028: 2, L0591: 2, H0352: 2, H0265: 1, T0002: 1, H0686: 1, H0685: 1, H0295: 1, H0657: 1, L0760: 1, S0212: 1, H0484: 1, H0177: 1, H0638: 1, L0617: 1, L0005: 1, S0442: 1, S0376: 1, H0637: 1, H0411: 1, H0370: 1, H0587: 1, H0632: 1, T0109: 1, H0156: 1, H0085: 1, H0327: 1, H0530: 1, H0046: 1, H0041: 1, S0388: 1, H0630: 1, H0271: 1, H0644: 1, H0628: 1, H0181: 1, H0617: 1, H0674: 1, H0068: 1, H0040: 1, H0488: 1, L0564: 1, T0041: 1, H0494: 1, H0633: 1, S0144: 1, S0210: 1, S0422: 1, L0369: 1, L0762: 1, L0372: 1, L0646: 1, L0765: 1, L0363: 1, L0768: 1, L0651: 1, L0653: 1, L0629: 1, L0657: 1, L0526: 1, L0532: 1, S0053: 1, S0216: 1, H0144: 1, H0519: 1, S0126: 1, H0689: 1, H0690: 1, H0684: 1, S0027: 1, L0742: 1, L0756: 1, L0780: 1, L0755: 1, H0444: 1, H0445: 1, L0596:		

							1, L0605: 1, L0592: 1, L0593: 1, L0362: 1, L0603: 1 and H0136: 1.		
347	HPIAA80	829972	357	314 - 427	861		AR089: 9, AR060: 6 L0750: 3, H0672: 2, L0744: 2, H0583: 1, H0587: 1, L0021: 1, S0010: 1, H0024: 1, H0266: 1, H0169: 1, S0364: 1, H0068: 1, H0038: 1, T0004: 1, H0625: 1, S0150: 1, L0769: 1, L0667: 1, L0649: 1, L0784: 1, L0526: 1, L0790: 1, L0792: 1, L0663: 1, H0696: 1, L0747: 1, L0608: 1 and S0276: 1.		
348	HPJBJ51	829114	358	715 - 924	862	Arg-48 to Tyr-54.	AR060: 5, AR089: 3 L0439: 4, L0740: 3, L0777: 3, H0318: 2, H0056: 2, H0683: 2, L0747: 2, L0756: 2, L0779: 2, L0731: 2, L0759: 2, H0171: 1, S0045: 1, L0021: 1, H0036: 1, S0049: 1, L0041: 1, L0471: 1, H0271: 1, H0328: 1, H0428: 1, H0591: 1, H0040: 1, S0016: 1, H0560: 1, S0150: 1, S0142: 1, L0764: 1, L0662: 1, L0803: 1, L0805: 1, L0776: 1, L0809: 1, L0647: 1, L0788: 1, L0666: 1, L0665: 1, H0520: 1, H0684: 1, H0435: 1, H0672: 1, S0152: 1, H0521: 1, L0744: 1, L0754: 1, L0780: 1, L0755: 1, L0758: 1, H0445: 1, L0591: 1, L0608: 1, S0011: 1, S0194:		

							1, H0543: 1 and H0422: 1.		
349	HPJBJ51	878609	359	716 - 925	863	Arg-48 to Tyr-54.	AR060: 5, AR089: 3 L0439: 4, L0740: 3, L0777: 3, H0318: 2, H0056: 2, H0683: 2, L0747: 2, L0756: 2, L0779: 2, L0731: 2, L0759: 2, H0171: 1, S0045: 1, L0021: 1, H0036: 1, S0049: 1, L0041: 1, L0471: 1, H0271: 1, H0328: 1, H0428: 1, H0591: 1, H0040: 1, S0016: 1, H0560: 1, S0150: 1, S0142: 1, L0764: 1, L0662: 1, L0803: 1, L0805: 1, L0776: 1, L0809: 1, L0647: 1, L0788: 1, L0666: 1, L0665: 1, H0520: 1, H0684: 1, H0435: 1, H0672: 1, S0152: 1, H0521: 1, L0744: 1, L0754: 1, L0780: 1, L0755: 1, L0758: 1, H0445: 1, L0591: 1, L0608: 1, S0011: 1, S0194: 1, H0543: 1 and H0422: 1.		
350	HPJBU43	862058	360	242 - 295	864		AR060: 9, AR089: 5 S0152: 1 and L0589: 1.		
351	HPJCW58	612866	361	177 - 263	865	Leu-16 to Gly-21.	AR060: 6, AR089: 4 S0152: 1		
352	HPMBX22	702012	362	211 - 270	866		L0362: 17, L0766: 11, L0754: 10, L0747: 4, L0731: 4, S0003: 3, H0547: 3, S0026: 3, S0212: 2, H0251: 2, H0046: 2, H0031: 2, H0674: 2, L0769: 2, L0663: 2, L0665: 2, L0439: 2, H0445: 2, H0170: 1, H0686: 1, T0049: 1, S0134: 1, H0657: 1, S0001: 1, H0459:		

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353	HPMCJ84	562779	363	83 - 199	867		H0031: 1		
354	HPMCV30	612870	364	52 - 195	868	Leu-39 to His-47.	L0526: 11, L0622: 8, H0670: 8, H0087: 7, S0360: 5, H0594: 5, H0188: 5, H0412: 5, S0206: 5, H0218: 4, S0418: 4, H0318: 4, H0024: 4, H0617: 4, L0770: 4, L0783: 4, S0328: 4, S0027: 4, H0265: 3, H0663: 3, T0048: 3, H0597: 3, H0123: 3, H0673: 3, S0366: 3, H0135: 3, H0616: 3, S0002: 3, L0775: 3, L0776: 3, L0518: 3, L0663: 3, H0144: 3, S0374: 3, S0126: 3, S0380: 3, S3014: 3, H0352: 3, H0624: 2, H0556:		

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355	HPMFH77	702014	365	251 - 358	869	Pro-29 to Cys-35.	AR089: 23, AR060: 6 L0750: 4, L0809: 3, L0747: 3, L0776: 2, L0740: 2, L0754: 2, S0045: 1, S0010: 1, H0581: 1, T0010: 1, H0687: 1, H0031: 1, L0770: 1, L0764: 1, L0375: 1, L0748: 1 and L0731: 1.		
356	HPQAX38	843592	366	295 - 345	870		AR089: 39, AR060: 19 S0136: 462 and H0413: 1.		
357	HPQAX38	845752	367	295 - 345	871		AR089: 39, AR060: 19 S0136: 462 and H0413: 1.		
358	HPQCB83	740761	368	85 - 189	872		AR060: 2 S0136: 15		
359	HPQCC53	570821	369	16 - 123	873		AR089: 14, AR060: 12 L0803: 3, S0354: 2, S0280: 2, H0052: 2, H0617: 2, L0770: 2, L0646: 2, L0809: 2, S0028: 2, L0753: 2, H0445: 2, H0556: 1, S6024: 1, H0657: 1, S0418: 1, S0420: 1, H0351: 1, H0441: 1, H0586: 1, H0013: 1,		

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360	HPRBH85	695752	370	684 - 1088	874	Glu-121 to Leu-126.	AR271: 8, AR246: 7, AR243: 7, AR244: 6, AR206: 6, AR310: 5, AR249: 5, AR273: 5, AR198: 5, AR312: 5, AR186: 5, AR204: 5, AR251: 5, AR202: 5, AR033: 4, AR253: 4, AR053: 4, AR265: 4, AR309: 4, AR055: 4, AR061: 4, AR205: 4, AR039: 4, AR052: 4, AR213: 3, AR096: 3, AR104: 3, AR248: 3, AR089: 2, AR263: 2, AR060: 2 L0439: 5, L0740: 4, L0777: 4, L0755: 4, L0794: 2, L0803: 2, L0438: 2, L0602: 2, L0752: 2, L0599: 2,		

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361	HPRCA64	824074	371	1810 - 1929	875		AR271: 6, AR272: 5, AR246: 4, AR096: 4, AR089: 4, AR060: 4, AR033: 3, AR104: 3, AR207: 3, AR245: 3, AR197: 3, AR201: 2, AR205: 2, AR053: 2, AR264: 2, AR243: 2, AR204: 1 S0222: 8, L0662: 8, L0005: 7, L0665: 7, L0659: 6, L0666: 6, H0547: 6, L0740: 6, L0439: 5, S6028: 4, L0483: 4, L0438: 4, L0754: 4, L0756: 4, L0779: 4, S0194: 4, S0049: 3, S0388: 3, L0646: 3, L0521: 3, L0663: 3, L0664: 3, H0435: 3, H0696: 3, L0777: 3, H0624: 2, H0171: 2, S0356: 2, S0442: 2, S0354: 2, S0360: 2, S0408: 2, H0052: 2, H0046: 2, H0563: 2, L0471: 2, S0051: 2, H0266: 2, H0040: 2, H0623: 2, S0440: 2, L0598: 2, L0520: 2, L0641: 2, L0771: 2, L0768: 2, L0774: 2, L0805: 2, L0776: 2, L0518: 2, L0565: 2, H0519: 2, H0670:		

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362	HPRCD35	853551	372	265 - 372	876	Asp-16 to Gln-27.	AR089: 11, AR060: 7 L0748: 5, L0754: 5, L0766:		

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363	HPTRM02	812879	373	885 - 1127	877	His-48 to Ser-61, Ala-66 to Val-72.	H0617: 7, H0087: 6, H0657: 5, S0410: 3, L0754: 3, S0356: 2, H0150: 2, H0687: 2, H0424: 2, H0551: 2, L0769: 2, L0774: 2, L0743: 2, L0758: 2, L0592: 2, H0556: 1, T0002: 1, H0686: 1, H0685: 1, T0049: 1, H0663: 1, S0442: 1, S0444: 1, S0360: 1, S0476:		

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364	HPWBA29	561956	374	194 - 235	878		AR089: 11, AR060: 8 S0044: 1		
365	HPWDK06	839825	375	405 - 485	879		L0743: 11, L0748: 10, L0731: 6, L0754: 5, H0427: 4, H0575: 3, H0428: 3, H0031: 3, L0517: 3, H0696: 3, S0044: 3, L0758: 3, H0716: 2, H0411: 2, H0597: 2, H0620: 2, H0024: 2, H0687: 2, H0135: 2, L0770: 2, L0662: 2, L0775: 2, L0518: 2, L0666: 2, H0144: 2, S0028: 2, L0744: 2, L0751: 2, L0750: 2, L0605: 2, H0713: 1, H0717: 1, S0116: 1, S0212: 1, H0669: 1, H0662: 1, S0418: 1, S0360: 1, S0045: 1, H0619:		

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366	HRAAD30	866187	376	220 - 297	880		AR060: 5, AR089: 2 L0731: 6, H0617: 4, L0758: 4, H0013: 3, H0547: 3, L0748: 3, L0747: 3, S0420: 2, S0358: 2, L0770: 2, S0126: 2, L0439: 2, L0751: 2, L0777: 2, L0757: 2, H0543: 2, S0040: 1, H0550: 1, H0497: 1, H0333: 1, H0618: 1, H0253: 1, S0474: 1, H0546: 1, H0571: 1, L0471: 1, H0024: 1, H0051: 1, H0286: 1, H0644: 1, L0455: 1, T0067: 1,		

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367	HRADA42	827302	377	122 - 256	881		AR089: 21, AR060: 13 S0358: 13, L0771: 7, S0126: 5, L0754: 5, L0768: 4, L0766: 4, L0748: 4, L0779: 4, L0649: 3, L0775: 3, H0171: 2, S0418: 2, H0039: 2, L0763: 2, L0769: 2, L0764: 2, L0774: 2, L0747: 2, L0752: 2, L0588: 2, H0624: 1, H0657: 1, S0116: 1, H0341: 1, H0671: 1, L0005: 1, S0360: 1, S0408: 1, H0580: 1, S0045: 1, S0046: 1, H0393: 1, H0369: 1, H0370: 1, H0333: 1, H0069: 1, H0318: 1, H0530: 1, H0150: 1, T0003: 1, H0373: 1, H0266: 1, S0003: 1, H0622: 1, L0055: 1, H0038: 1, H0100: 1, H0202: 1, H0646: 1, S0142: 1, S0344: 1, S0210: 1, H0529: 1, L0770: 1, L0646: 1, L0767: 1, L0381: 1, L0378: 1, L0776: 1, L0655: 1, L0659: 1, L0809: 1, H0547: 1, H0711: 1, H0659:		

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368	HRADF49	866481	378	169 - 930	882	Pro-85 to Asp-99, Arg-163 to Arg-170, Gln-183 to Thr-189, Pro-201 to Ser-209, Ser-216 to Gly-222.	AR244: 12, AR205: 6, AR249: 5, AR206: 5, AR213: 3, AR186: 3, AR104: 3, AR060: 3, AR033: 3, AR251: 3, AR096: 2, AR061: 2, AR243: 2, AR089: 2, AR263: 1, AR309: 1, AR053: 1, AR055: 1, AR052: 1 L0751: 7, H0618: 6, L0754: 6, L0758: 6, L0748: 5, L0439: 4, H0580: 3, H0253: 3, L0770: 3, L0663: 3, H0556: 2, H0351: 2, H0052: 2, H0567: 2, H0625: 2, S0142: 2, L0659: 2, L0543: 2, H0576: 2, L0749: 2, H0423: 2, H0381: 1, S0212: 1, H0254: 1, H0663: 1, H0638: 1, S0418: 1, S6022: 1, H0549: 1, S0222: 1, H0370: 1, H0497: 1, L0622: 1, L0623: 1, H0101: 1, H0427: 1, H0194: 1, H0596: 1, H0081: 1, H0014: 1, H0355: 1, H0510: 1, H0424: 1, H0030: 1, H0553:		

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369	HRADN25	800628	379	198 - 395	883	Gly-60 to Pro-65.	AR089: 17, AR060: 12 H0556: 10, H0618: 6, H0253: 6, L0748: 6, L0758: 6, H0305: 5, L0742: 5, H0038: 4, L0439: 4, L0592: 3, H0013: 2, H0194: 2, H0545: 2, H0009: 2, H0014: 2, H0617: 2, H0087: 2, L0769: 2, L0774: 2, L0776: 2, L0665: 2, L0438: 2, H0690: 2, H0539: 2, S0380: 2, L0747: 2, L0779: 2, H0265: 1, H0657: 1, S0420: 1, S0376: 1, S0278: 1, H0455: 1, H0333: 1, H0632: 1, H0581: 1, S0049: 1, H0052: 1, H0123: 1, S0362: 1, H0687: 1, H0688: 1, H0606: 1, H0673: 1, H0135: 1, H0090: 1, H0591: 1, H0040: 1, H0616: 1, S0438: 1, S0142: 1, L0638: 1, L4747: 1, L0796: 1, L5565: 1, L0761: 1, L0643: 1,		

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370	HRADT25	800737	380	233 - 424	884	Gln-30 to Tyr-36, Thr-47 to Glu-56, Asn-58 to Thr-63.	AR060: 3, AR089: 2 H0555: 2 and S0356: 1.		
371	HRDAI17	560720	381	578 - 673	885		H0031: 2, L0758: 2, H0013: 1, H0124: 1, L0369: 1, L0792: 1, S0216: 1, L0745: 1 and L0753: 1.		
372	HRDDQ39	840405	382	215 - 355	886	Gly-27 to Pro-35.	AR089: 18, AR060: 11 S0001: 2, H0436: 2, S0134: 1, H0657: 1, H0441: 1, H0009: 1, H0123: 1, H0050: 1, H0428: 1, H0124: 1, H0529: 1, H0521: 1 and H0352: 1.		
373	HRDER22	688056	383	32 - 61	887		AR060: 11, AR089: 10, AR055: 9, AR033: 8, AR243: 8, AR263: 8, AR104: 7, AR194: 7, AR061: 7, AR186: 7, AR246: 6, AR202: 6, AR204: 6, AR206: 6, AR251: 6, AR198: 5, AR273: 5, AR205: 5, AR039: 5, AR310: 5, AR052: 5, AR312: 4,		

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374	HRDEX93	816046	384	649 - 867	888		AR060: 14, AR089: 13 H0694: 12, L0748: 10, L0731: 7, L0754: 6, H0265: 5, H0556: 5, L0758: 5, S0420: 4, S0408: 4, L0517: 4, H0657: 3, H0618: 3, H0052: 3, H0083: 3, H0553: 3, H0124: 3, H0494: 3, L0763: 3, L0666: 3, L0663: 3, S0126: 3, L0747: 3, H0295: 2, S0134: 2, S0418: 2, H0637: 2, S0046: 2, H0431: 2, H0575: 2, H0545: 2, H0271: 2, H0039: 2, H0424: 2, H0641: 2, L0764: 2, L0766: 2, L0774: 2, L0775: 2, L0776: 2, L0655:		

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375	HRDFK37	840381	385	120 - 152	889		H0556: 4, H0253: 4, H0620: 4, L0731: 4, H0124:		

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376	HRGBD54	828436	386	1958 - 1990	890		H0413: 2, L0438: 2, L0747: 2, L0755: 2, H0170: 1, H0650: 1, H0657: 1, H0662: 1, H0402: 1, S0132: 1, L0717: 1, H0251: 1,		

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377	HROEA08	866190	387	50 - 151	891		S0474: 17, H0521: 14, L0766: 12, L0809: 8, H0069: 7, H0591: 7, H0556: 6, H0486: 5, H0090: 5, L0655: 5, S0134: 4, H0650: 4, S0003: 4, H0268: 4, S0422: 4, L0770: 4, H0518: 4, L0777: 4, S0114: 3, H0656: 3, H0638: 3, H0271: 3, H0039: 3, H0641: 3, L0598: 3, L0763: 3, L0659: 3, H0436: 3, L0754: 3, L0756: 3, L0731: 3, H0423: 3, H0422: 3, H0265: 2, H0657: 2, S0354: 2, H0013: 2, L0105: 2, H0581: 2, H0622: 2, H0598: 2, H0100: 2, S0144: 2, H0529: 2, L0761: 2, L0648: 2, L5564: 2, L0803: 2, L0776: 2, L0789: 2, L0663: 2, H0696: 2, H0445: 2, H0542: 2, H0506: 2, H0624: 1, H0305: 1, H0125: 1, S0360: 1, H0549: 1, H0586: 1, T0060: 1, H0075: 1, H0002: 1, H0599: 1, H0004: 1, H0318: 1, H0421: 1, H0251: 1, H0457: 1, H0178: 1, L0471:		

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378	HSAVA08	580870	388	66 - 146	892	Thr-15 to Gln-22.	AR089: 17, AR060: 9 S0114: 2		
379	HSAVW42	637660	389	129 - 197	893		AR089: 13, AR060: 8 H0412: 2, S0114: 1, S0222: 1, H0169: 1, L0520: 1, L0805: 1, L0776: 1, L0750: 1 and L0777: 1.		
380	HSAWN53	634697	390	159 - 347	894	Gln-42 to Ser-63.	AR089: 9, AR060: 8 S0114: 1		
381	HSAWZ40	634000	391	124 - 237	895		AR060: 8, AR089: 7 S0114: 1		
382	HSAYC41	688057	392	106 - 213	896	Lys-23 to Lys-36.	S0114: 1, H0411: 1, H0179: 1, L0665: 1 and H0435: 1.		
383	HSDZM54	637870	393	445 - 552	897	Lys-17 to Leu-23.	AR060: 424, AR089: 210		
384	HSHBF76	715838	394	129 - 161	898		L0747: 7, H0599: 5, H0622: 4, L0764: 4, L0794: 4, L0659: 4, L0005: 3,		

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385	HSIFG47	778378	395	304 - 345	899		H0590: 1		
386	HSJBY32	702020	396	257 - 532	900	Pro-49 to Ala-69, Pro-72 to His-77, Pro-79 to Cys-89.	AR060: 2, AR089: 1 S0222: 1, H0271: 1, L0796: 1, L0766: 1, S0032: 1 and L0747: 1.		
387	HSKDR27	580874	397	473 - 556	901	Pro-18 to Gly-26.	AR060: 7, AR089: 5 S0027: 95, S0192: 54, S3014: 53, S0126: 42, S0040: 35, H0424: 23, S0028: 22, S0037: 19, S3012: 16, H0213: 13, T0006: 12, H0250: 11, S0032: 11, L0744: 11, T0040: 10, H0124: 10, H0429: 10, L0740: 10, L0588: 10, L0754: 9, H0545: 8, H0280: 8, S0194:		

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388	HSLHG78	846148	398	647 - 859	902	Arg-15 to Ser-27, Ser-29 to Tyr-41, Thr-55 to Phe-62.	AR060: 4, AR089: 2 L0777: 9, L0759: 8, L0740: 6, L0756: 6, L0665: 5, L0771: 4, L0731: 4, L0637: 3, S0028: 3, L0744: 3, L0439: 3, L0471: 2, L0662: 2, L0809: 2, L0751: 2, L0779: 2, L0362: 2, H0624: 1, S6024: 1, S0220: 1, T0039: 1, H0156: 1, L0021: 1, H0644: 1, H0032: 1, H0316: 1, H0488: 1, L0598: 1, L0638: 1, L0641: 1, L0803: 1, L0774: 1, L0776: 1, L0807: 1, L0636: 1,		

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389	HSLHX15	777861	399	485 - 610	903	Arg-28 to Arg-35.	AR060: 8, AR089: 4 T0040: 1, L0564: 1, S0028: 1 and L0480: 1.		
390	HSNAP85	784054	400	941 - 955	904		AR089: 16, AR060: 9 L0105: 11, L0803: 8, L0754: 8, L0777: 6, L0770: 4, L0805: 4, S0360: 2, L0157: 2, T0023: 2, H0413: 2, L0794: 2, L0766: 2, L0649: 2, L0774: 2, L0776: 2, L0666: 2, L0665: 2, H0696: 2, L0743: 2, L0744: 2, L0779: 2, L0752: 2, L0731: 2, L0759: 2, S0242: 2, H0624: 1, H0664: 1, S0418: 1, H0610: 1, H0013: 1, H0575: 1, H0318: 1, H0545: 1, H0569: 1, H0328: 1, H0163: 1, H0412: 1, S0370: 1, S0438: 1, S0422: 1, L0646: 1, L0521: 1, L0804: 1, L0775: 1, L0654: 1, L0655: 1, L0634: 1, L0809: 1, L0663: 1, S0374: 1, H0547: 1, H0672: 1, S0378: 1, H0576: 1, L0747: 1, L0750: 1, L0758: 1, L0599: 1, L0608: 1 and S0026: 1.		
391	HSNAZ09	527221	401	164 - 208	905	Ser-6 to Ser-14.	H0163: 1 and L0748: 1.		
392	HSNBM34	635131	402	1508 - 1696	906	Ala-17 to Thr-26, Gly-49 to Gln-62.	AR060: 8, AR089: 4 H0590: 1 and H0163: 1.		
393	HSOAH16	827058	403	206 - 334	907	Pro-2 to Arg-7,	H0343: 1		

						Trp-32 to Leu-38.			
394	HSQBF66	560726	404	229 - 429	908		AR089: 12, AR060: 8 S0026: 1		
395	HSQDO85	853393	405	133 - 168	909		AR089: 19, AR060: 15 H0556: 17, H0265: 13, L0740: 13, H0144: 12, L0747: 11, H0341: 9, H0494: 9, L0770: 9, H0551: 8, H0521: 8, L0757: 8, L0596: 8, H0599: 7, L0471: 7, L0665: 7, L0595: 7, L0717: 6, H0046: 6, H0090: 6, H0040: 6, S0002: 6, L0764: 6, L0775: 6, L0666: 6, H0436: 6, L0731: 6, H0542: 6, H0543: 6, H0657: 5, S0356: 5, S0358: 5, S0045: 5, H0050: 5, H0266: 5, H0135: 5, L0771: 5, L0662: 5, L0659: 5, H0670: 5, L0750: 5, H0624: 4, H0713: 4, S0114: 4, H0656: 4, H0618: 4, H0318: 4, H0581: 4, S0003: 4, H0644: 4, H0529: 4, L0763: 4, L0783: 4, L0663: 4, S0126: 4, H0435: 4, H0134: 4, L0748: 4, L0439: 4, L0362: 4, L0603: 4, H0422: 4, S0040: 3, S0212: 3, H0662: 3, S0046: 3, H0013: 3, H0575: 3, H0628: 3, H0038: 3, H0634: 3, H0623: 3, L0772: 3, L0646: 3, L0766: 3, L0806: 3, L0776: 3, L0664: 3, H0547: 3, S0328: 3, H0522: 3, S0037: 3, S3014: 3, S0028: 3, L0752:		

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396	HSQES57	831222	406	195 - 989	910	Thr-76 to Thr-81,	AR060: 15, AR089: 14		

						Asp-87 to Glu-94, Gln-100 to Ser-106, Arg-135 to Pro-143, Tyr-236 to Ser-244.	L0747: 4, L0769: 3, L0662: 3, L0766: 3, L0809: 3, L0748: 3, L0751: 3, H0618: 2, H0012: 2, L0770: 2, L0764: 2, S0406: 2, L0744: 2, H0352: 2, H0686: 1, S0040: 1, S0114: 1, H0657: 1, H0661: 1, S0442: 1, H0550: 1, H0587: 1, H0597: 1, H0123: 1, S0250: 1, H0166: 1, H0038: 1, S0440: 1, L0639: 1, L0643: 1, L0771: 1, L0521: 1, L0774: 1, L0379: 1, L0783: 1, S0374: 1, H0593: 1, S0380: 1, S0404: 1, L0743: 1, L0750: 1, L0756: 1, L0777: 1, L0753: 1, L0757: 1, L0758: 1, L0599: 1, S0026: 1 and H0008: 1.		
397	HSRBE06	871264	407	128 - 193	911		AR089: 14, AR060: 7 S0011: 3, H0306: 1, H0402: 1, L0004: 1, H0486: 1, H0050: 1, S0051: 1, H0494: 1 and S0002: 1.		
398	HSSDI26	560722	408	253 - 318	912		AR089: 7, AR060: 6 H0135: 1		
399	HSSEA64	853395	409	58 - 246	913		AR060: 10, AR089: 8 H0052: 17, L0745: 11, L0748: 10, L0777: 8, L0755: 8, L0766: 7, H0547: 7, L0439: 7, L0774: 6, L0771: 5, H0599: 4, L0662: 4, L0746: 4, L0163: 3, H0059: 3, H0100: 3, L0770: 3, L0775: 3, L0665: 3, S0126: 3, L0741: 3, L0751: 3, L0758: 3, L0759: 3, H0663:		

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400	HSSEF77	658725	410	184 - 366	914	Arg-22 to Lys-27, Leu-30 to Asn-39.	H0617: 7, L0750: 7, H0556: 5, L0769: 5, L0783: 5, L0758: 5, L0759: 5, L0665: 4, L0741: 4, S0132: 3, L0761: 3, L0742: 3, L0439: 3, L0755: 3, L0592: 3, H0618: 2, H0620: 2, H0038: 2, L0771: 2, L0662: 2, L0659: 2, L0666: 2, S0126: 2, H0670: 2, S0328: 2, S0380: 2, L0747: 2, L0753: 2, L0731: 2, H0395: 1, H0295: 1, H0294: 1, H0657: 1, H0656: 1, H0341: 1, H0484: 1, H0663: 1, H0638: 1, S0356: 1, S0444: 1, H0549: 1, H0550: 1, H0370: 1, H0455: 1, H0632: 1, H0486: 1, T0039: 1, T0112: 1, H0156: 1, H0581: 1, H0052: 1, H0545: 1, H0046: 1, H0150: 1, H0081: 1, S0051: 1, H0107: 1, H0061: 1, H0188: 1, H0288: 1, S0250: 1, H0428: 1, H0135: 1, H0163: 1, H0090: 1, H0616: 1, T0004: 1, S0438: 1, L0770: 1, L0796: 1, L0637: 1, L0772: 1, L0372: 1, L0646: 1, L0521: 1, L0768: 1, L0766: 1, L5574: 1, L0774: 1, L0775: 1, L0375: 1, L0806: 1, L0776: 1, L0657: 1, L0658: 1, L0540: 1, L0384: 1,		

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401	HSSFE38	742512	411	264 - 641	915	Glu-37 to Arg-42, Gly-108 to Cys-117.	AR089: 21, AR060: 18 L0766: 7, L0769: 6, S0418: 4, L0747: 4, S0424: 3, H0341: 2, S0278: 2, L0471: 2, H0083: 2, H0538: 2, L0770: 2, L0771: 2, L0775: 2, L0809: 2, H0520: 2, L0744: 2, L0754: 2, L0777: 2, L0759: 2, L0597: 2, S0026: 2, H0667: 2, H0171: 1, H0686: 1, S0212: 1, H0125: 1, S0420: 1, S0358: 1, S0376: 1, S0360: 1, S0046: 1, H0393: 1, H0333: 1, H0575: 1, H0581: 1, H0309: 1, H0046: 1, H0567: 1, H0188: 1, H0428: 1, H0553: 1, H0135: 1, H0040: 1, T0041: 1, L0369: 1, L0763: 1, L0643: 1, L0764: 1, L0773: 1, L0804: 1, L0375: 1, L0806: 1, L0776: 1, L0655: 1, L0783: 1, L0382: 1, L0666: 1, H0144: 1, H0593: 1, H0435: 1, H0659: 1, H0660: 1, H0666: 1, L0750: 1, L0755: 1, L0731: 1, L0757: 1 and H0543: 1.		
402	HSSGJ58	747714	412	245 - 361	916	Thr-14 to Gln-34.	AR060: 2, AR089: 2 L0749: 2, H0135: 1, L0558: 1 and L0748: 1.		

403	HSWBE76	751308	413	380 - 559	917		AR060: 7, AR089: 5 L0777: 4, L0751: 3, L0747: 3, L0648: 2, L0779: 2, L0753: 2, S0342: 1, H0484: 1, H0661: 1, S0358: 1, L0009: 1, H0411: 1, S6014: 1, H0546: 1, H0123: 1, H0188: 1, S0366: 1, H0413: 1, S0344: 1, H0529: 1, L0769: 1, L0627: 1, L0774: 1, L0378: 1, L0776: 1, L0655: 1, L0663: 1, S0380: 1, H0478: 1, L0743: 1, L0750: 1 and S0196: 1.		
404	HSXCP38	895392	414	211 - 255	918		AR060: 4, AR089: 2 L0439: 4, H0050: 1, T0010: 1, S0036: 1, L0435: 1, L0438: 1 and L0759: 1.		
405	HSYBI06	740766	415	232 - 333	919		AR089: 21, AR060: 12 S0358: 6, H0556: 5, H0024: 4, H0266: 3, H0159: 2, H0663: 2, T0039: 2, H0599: 2, S0010: 2, H0032: 2, H0059: 2, L0740: 2, L0581: 2, S0011: 2, H0543: 2, H0265: 1, H0222: 1, H0657: 1, H0255: 1, H0228: 1, S0418: 1, S0046: 1, H0645: 1, H0393: 1, H0431: 1, S0346: 1, T0048: 1, H0052: 1, H0251: 1, H0544: 1, H0123: 1, H0050: 1, H0271: 1, H0031: 1, H0644: 1, L0143: 1, L0455: 1, H0551: 1, H0623: 1, S0386: 1, H0100: 1, S0112: 1, S0015: 1, S0370: 1, S0144: 1, S0426: 1, L0369: 1,		

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406	HT1SC27	630647	416	366 - 449	920		AR060: 6, AR089: 6 H0218: 22, H0219: 7, H0157: 3, H0207: 2, H0169: 1, S0440: 1 and L0749: 1.		
407	HT3BF49	838620	417	306 - 320	921		H0271: 2, L0791: 2, L0439: 2, H0159: 1, H0561: 1, L0774: 1, S0052: 1 and L0779: 1.		
408	HT4FV41	853400	418	39 - 452	922	Ala-15 to Gln-22, Gly-36 to Gly-41, Arg-47 to Pro-63, Pro-85 to His-98.	AR244: 10, AR204: 9, AR202: 9, AR194: 9, AR052: 9, AR271: 8, AR246: 8, AR198: 7, AR089: 7, AR310: 7, AR060: 7, AR309: 7, AR206: 7, AR055: 7, AR053: 7, AR205: 6, AR312: 6, AR186: 6, AR251: 6, AR033: 6, AR243: 6, AR213: 5, AR273: 5, AR061: 5, AR248: 5, AR253: 5, AR039: 4, AR104: 4, AR096: 4, AR249: 4, AR263: 3, AR265: 3 L0794: 9, L0769: 6, L0751: 6, L0761: 4, L0809: 4, H0521: 4, L0439: 4, H0585: 3, H0617: 3, H0494: 3,		

							L0659: 3, L0665: 3, L0777: 3, H0423: 3, H0265: 2, H0255: 2, S0420: 2, S0354: 2, S0376: 2, H0370: 2, H0069: 2, H0545: 2, H0083: 2, H0040: 2, L0764: 2, L0662: 2, L0803: 2, L0666: 2, L0663: 2, L0438: 2, H0547: 2, L0743: 2, L0757: 2, S0436: 2, H0667: 2, H0422: 2, S0040: 1, H0713: 1, H0295: 1, H0341: 1, H0254: 1, H0638: 1, S0418: 1, S0360: 1, H0580: 1, S0046: 1, S0476: 1, H0587: 1, H0497: 1, H0635: 1, H0575: 1, H0004: 1, H0618: 1, H0052: 1, H0194: 1, H0544: 1, H0041: 1, H0373: 1, T0010: 1, H0267: 1, H0179: 1, S0250: 1, H0622: 1, L0194: 1, H0181: 1, H0124: 1, H0135: 1, H0087: 1, H0551: 1, H0412: 1, H0413: 1, S0038: 1, H0633: 1, H0646: 1, S0144: 1, H0529: 1, L0369: 1, L0640: 1, L0763: 1, L0770: 1, L0772: 1, L0372: 1, L0646: 1, L0800: 1, L0643: 1, L0644: 1, L0768: 1, L0805: 1, L0655: 1, L0518: 1, L0783: 1, L0384: 1, L0789: 1, S0052: 1, H0519: 1, H0682: 1, S0152: 1, H0187: 1, S0390: 1, L0744: 1, L0780: 1, L0752: 1, L0758: 1, H0665: 1, H0543: 1 and		

							S0424: 1.		
409	HT5FX79	794169	419	228 - 380	923	Glu-1 to Ser-9, Ser-23 to Ser-35.	AR089: 11, AR060: 10 H0584: 45, L0748: 12, L0766: 8, L0758: 7, H0445: 7, H0167: 6, H0024: 6, L0805: 6, L0779: 6, H0556: 5, L0809: 5, L0750: 5, L0777: 5, L0770: 4, L0743: 4, L0754: 4, L0747: 4, H0543: 4, H0265: 3, H0581: 3, H0090: 3, H0529: 3, L0763: 3, L0769: 3, L0803: 3, L0789: 3, L0749: 3, L0731: 3, H0333: 2, H0575: 2, L0471: 2, H0179: 2, L0483: 2, H0708: 2, H0494: 2, H0561: 2, L0504: 2, L0768: 2, L0649: 2, L0774: 2, L0375: 2, L0776: 2, L0655: 2, L0783: 2, L0790: 2, H0698: 2, H0547: 2, H0593: 2, H0539: 2, L0755: 2, L0589: 2, H0423: 2, H0624: 1, H0713: 1, H0716: 1, S0114: 1, S0134: 1, H0583: 1, H0650: 1, H0657: 1, H0341: 1, H0255: 1, H0306: 1, H0402: 1, L0481: 1, S0356: 1, S0360: 1, H0675: 1, H0580: 1, H0619: 1, H0645: 1, H0453: 1, H0574: 1, S0474: 1, H0309: 1, L0157: 1, H0014: 1, H0083: 1, L0052: 1, H0615: 1, H0622: 1, T0023: 1, H0553: 1, H0598: 1, H0038: 1, H0616: 1, H0551: 1, H0477: 1, H0264: 1, H0056:		

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410	HT5GR59	801930	420	135 - 230	924		AR060: 7, AR089: 5 H0584: 36, H0585: 23, H0141: 11, H0167: 9, H0457: 7, H0521: 6, H0575: 3, L0731: 3, H0265: 2, H0556: 2, H0581: 2, L0761: 2, H0543: 2, H0140: 1, H0638: 1, S0358: 1, S0140: 1, H0619: 1, H0497: 1, H0559: 1, H0069: 1, H0635: 1, H0427: 1, S0280: 1, H0252: 1, H0477: 1, L0667: 1, L0768: 1, L0775: 1, L0659: 1, L0791: 1, L0792: 1, S0053: 1, L0777: 1, L0758: 1, H0445: 1 and H0506: 1.		
411	HTAEI78	637684	421	632 - 646	925		AR249: 6, AR060: 5, AR248: 5, AR202: 4, AR273: 4, AR244: 4, AR053: 4, AR052: 3,		

							AR253: 3, AR186: 3, AR213: 3, AR206: 3, AR055: 3, AR251: 3, AR312: 3, AR061: 2, AR089: 2, AR243: 2, AR309: 2, AR246: 2, AR096: 2, AR204: 2, AR310: 2, AR198: 2, AR033: 2, AR205: 1 H0069: 1 and L0766: 1.		
412	HTDAA78	566861	422	151 - 213	926	Ala-5 to Leu-18.	AR089: 7, AR060: 4 H0039: 4, H0556: 3, H0551: 3, H0521: 3, S0040: 1, H0294: 1, H0638: 1, S0007: 1, H0393: 1, H0437: 1, H0549: 1, H0485: 1, H0486: 1, T0040: 1, H0013: 1, H0250: 1, H0069: 1, H0156: 1, H0575: 1, H0036: 1, S0346: 1, H0581: 1, H0421: 1, H0009: 1, H0050: 1, L0471: 1, H0373: 1, T0010: 1, H0083: 1, H0266: 1, H0622: 1, H0553: 1, H0032: 1, H0591: 1, H0477: 1, H0488: 1, H0056: 1, H0702: 1, L0438: 1, H0547: 1, H0519: 1, S0126: 1, H0522: 1, S3014: 1, L0748: 1, L0750: 1, S0011: 1 and L0697: 1.		
413	HTEAG62	812332	423	1017 - 1085	927		AR310: 2, AR206: 2, AR273: 2, AR186: 1 L0766: 6, H0038: 5, L0758: 4, H0616: 3, L0752: 3, L0779: 2, S0376: 1, S0132: 1, H0250: 1, H0457: 1, L0564: 1, L0794: 1,		

							L0803: 1, L0666: 1, L0777: 1, L0755: 1, H0595: 1, S0434: 1 and H0542: 1.		
414	HTECB02	806305	424	196 - 366	928	Ser-3 to Arg-9, Ser-19 to Pro-28, Arg-34 to Ala-43.	AR089: 12, AR060: 9 S0358: 3, H0253: 3, T0010: 3, L0806: 3, L0747: 3, L0749: 3, H0265: 2, H0663: 2, H0036: 2, H0618: 2, L0764: 2, L0666: 2, H0521: 2, L0759: 2, L0591: 2, L0604: 2, H0556: 1, S0114: 1, L0443: 1, H0619: 1, S0222: 1, H0559: 1, T0039: 1, S0280: 1, L0021: 1, H0196: 1, H0052: 1, H0545: 1, H0009: 1, H0172: 1, H0123: 1, H0024: 1, H0014: 1, S0388: 1, H0239: 1, H0428: 1, H0181: 1, H0591: 1, H0038: 1, S0002: 1, L0796: 1, L0761: 1, L0646: 1, L0766: 1, L0381: 1, L0803: 1, L0774: 1, L0775: 1, L0807: 1, L0517: 1, L0783: 1, L0384: 1, L0809: 1, L0545: 1, L0788: 1, L0664: 1, L0447: 1, H0658: 1, S0027: 1, L0743: 1, L0744: 1, L0751: 1, L0754: 1, L0745: 1, L0746: 1, L0750: 1, L0752: 1, L0755: 1, L0758: 1, H0665: 1 and H0542: 1.		
415	HTECC15	866488	425	211 - 282	929		H0616: 8, S0222: 5, S0049: 5, L0794: 4, S0126: 4, L0742: 3, L0439: 3, L0756: 3, S0212: 2, S0376: 2, H0013: 2, H0327: 2, H0399:		

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416	HTEDF18	635528	426	325 - 342	930		AR060: 5, AR089: 3 L0758: 6, L0794: 4, L0779: 4, H0038: 2 and L0790: 1.		
417	HTEDJ28	762845	427	287 - 424	931	Thr-34 to Leu-41.	AR089: 20, AR060: 11 L0747: 13, L0740: 8, L0758: 8, L0439: 7, H0124: 6, L0766: 6, L0750: 5, L0752: 5, L0757: 5, L0731: 4, L0662: 3, L0774: 3, L0809: 3, H0547: 3, L0779: 3, L0777: 3, H0375: 2, L0646: 2, L0783: 2, L0792: 2, L0663: 2, H0144: 2, L0759: 2, H0341: 1, S0358: 1, S0360: 1, S0222: 1, H0441: 1, H0497: 1, H0333: 1, T0060: 1, H0013: 1, H0156: 1, S0010: 1, H0581: 1, H0196: 1, H0327: 1, S0051: 1, H0399: 1, S6028: 1, S0003: 1, H0428: 1,		

							L0483: 1, H0553: 1, H0674: 1, H0038: 1, L0564: 1, S0382: 1, H0538: 1, L0763: 1, L0638: 1, L0765: 1, L0771: 1, L0649: 1, L0522: 1, L0775: 1, L0375: 1, L0806: 1, L0655: 1, L0661: 1, L0659: 1, L0438: 1, H0690: 1, H0648: 1, S0330: 1, H0521: 1, S0032: 1, L0756: 1, L0753: 1, L0755: 1, L0596: 1, L0590: 1, L0592: 1, L0608: 1, S0026: 1, H0423: 1, H0422: 1, S0462: 1 and S0460: 1.		
418	HTEDS12	838621	428	260 - 370	932	Ala-29 to Thr-36.	H0253: 4, L0779: 2, H0618: 1, H0050: 1, H0038: 1, L0151: 1, L0758: 1 and H0445: 1.		
419	HTEED26	762846	429	261 - 359	933	Asp-21 to Gln-28.	AR060: 5, AR089: 2 H0038: 5, L0758: 3, L0770: 2, H0539: 2, L0731: 2, T0049: 1, S0358: 1, H0574: 1, H0012: 1, H0428: 1, H0135: 1, L0764: 1, L0522: 1, L0803: 1, L0650: 1, L0775: 1, L0806: 1, L0805: 1, L0776: 1, L0666: 1, L0664: 1, H0144: 1, H0648: 1, H0631: 1, L0779: 1 and L0759: 1.		
420	HTEED26	753425	430	259 - 357	934	Asp-21 to Gln-28.	AR060: 5, AR089: 2 H0038: 5, L0758: 3, L0770: 2, H0539: 2, L0731: 2, T0049: 1, S0358: 1, H0574: 1, H0012: 1, H0428: 1, H0135: 1, L0764: 1, L0522: 1, L0803: 1, L0650:		

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421	HTEEF26	789606	431	262 - 285	935		AR060: 6, AR089: 4 H0038: 5, L0794: 5, L0766: 4, L0803: 4, L0758: 4, H0574: 3, H0457: 3, L0770: 3, L0775: 3, L0666: 3, L0779: 3, L0777: 3, L0752: 3, L0731: 3, H0039: 2, H0040: 2, L0763: 2, L0776: 2, L0657: 2, H0144: 2, L0438: 2, H0539: 2, S0406: 2, L0756: 2, L0759: 2, H0665: 2, L0411: 1, H0624: 1, H0170: 1, S0040: 1, T0049: 1, S0001: 1, S0348: 1, S0354: 1, S0358: 1, S0360: 1, S0408: 1, H0580: 1, S0045: 1, S0222: 1, H0486: 1, T0039: 1, H0575: 1, H0590: 1, H0581: 1, H0596: 1, H0012: 1, H0687: 1, S0003: 1, H0328: 1, H0428: 1, H0644: 1, H0032: 1, L0455: 1, H0135: 1, H0090: 1, H0616: 1, H0551: 1, H0412: 1, T0042: 1, H0494: 1, L0637: 1, L0372: 1, L0641: 1, L0764: 1, L0771: 1, L0767: 1, L0522: 1, L0650: 1, L0806: 1, L0805: 1, L0607: 1, L0664: 1, S0374: 1, T0068: 1, H0547: 1, H0519: 1, H0658: 1, H0648: 1, H0672:		

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422	HTEEF26	879704	432	262 - 285	936		AR060: 6, AR089: 4 H0038: 5, L0794: 5, L0766: 4, L0803: 4, L0758: 4, H0574: 3, H0457: 3, L0770: 3, L0775: 3, L0666: 3, L0779: 3, L0777: 3, L0752: 3, L0731: 3, H0039: 2, H0040: 2, L0763: 2, L0776: 2, L0657: 2, H0144: 2, L0438: 2, H0539: 2, S0406: 2, L0756: 2, L0759: 2, H0665: 2, L0411: 1, H0624: 1, H0170: 1, S0040: 1, T0049: 1, S0001: 1, S0348: 1, S0354: 1, S0358: 1, S0360: 1, S0408: 1, H0580: 1, S0045: 1, S0222: 1, H0486: 1, T0039: 1, H0575: 1, H0590: 1, H0581: 1, H0596: 1, H0012: 1, H0687: 1, S0003: 1, H0328: 1, H0428: 1, H0644: 1, H0032: 1, L0455: 1, H0135: 1, H0090: 1, H0616: 1, H0551: 1, H0412: 1, T0042: 1, H0494: 1, L0637: 1, L0372: 1, L0641: 1, L0764: 1, L0771: 1, L0767: 1, L0522: 1, L0650: 1, L0806: 1, L0805: 1, L0607: 1, L0664: 1, S0374: 1, T0068: 1, H0547: 1, H0519: 1, H0658: 1, H0648: 1, H0672: 1, S0330: 1, H0521: 1, S0044: 1, H0631: 1, L0745:		

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423	HTEEW69	764835	433	182 - 1153	937	Asp-63 to Thr-70, Asn-77 to Ser-86, Thr-101 to Arg-108, Pro-117 to Asn-123, Gly-194 to Trp-203.	AR089: 20, AR060: 15 H0038: 8, H0616: 4, L0779: 3, L0758: 3, L0753: 2, L0032: 1, T0006: 1, H0040: 1, L0768: 1 and H0547: 1.		
424	HTEGS07	827700	434	493 - 606	938	Pro-18 to Asn-27.	AR060: 6, AR089: 5 L0604: 3, L0804: 2, L0747: 2, L0485: 2, L0623: 1, S0364: 1, S0366: 1, H0038: 1, L0794: 1, L0775: 1 and L0779: 1.		
425	HTEGS11	862066	435	173 - 196	939		AR060: 8, AR089: 6 L0748: 9, L0598: 4, L0747: 4, L0471: 3, L0770: 3, H0144: 3, L0439: 3, L0750: 3, L0756: 3, H0575: 2, H0628: 2, L0794: 2, L0666: 2, H0660: 2, L0749: 2, L0777: 2, L0731: 2, L0581: 2, H0170: 1, H0713: 1, H0369: 1, S0222: 1, H0486: 1, H0013: 1, H0042: 1, H0196: 1, H0050: 1, H0428: 1, H0038: 1, L0769: 1, L0637: 1, L0761: 1, L0772: 1, L0766: 1, L0775: 1, L0367: 1, L0789: 1, L0793: 1, H0520: 1, H0547: 1, S3014: 1 and L0758: 1.		
426	HTEHA56	806461	436	280 - 546	940	His-10 to Ala-20.	AR089: 31, AR060: 17 L0754: 8, H0553: 4, L0770: 4, L0794: 4, H0615: 3, L0769: 3, L0803: 3, L0439: 3, L0777: 3, L0752: 3, H0052: 2, L0637: 2, L0768: 2, L0805: 2, L0659:		

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427	HTEHU59	840385	437	170 - 274	941	Ser-29 to Phe-34.	AR060: 3, AR089: 3 L0439: 7, L0758: 7, L0805: 5, H0620: 4, H0038: 4, L0748: 4, L0754: 4, L0747: 4, L0740: 3, L0756: 3, S0418: 2, S0360: 2, H0024: 2, H0286: 2, H0591: 2, L0598: 2, L0766: 2, L0649: 2, L0789: 2, L0750: 2,		

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428	HTEJD29	695798	438	101 - 172	942		H0038: 2		
429	HTEKM46	862069	439	171 - 287	943		L0439: 7, L0758: 7, L0805: 5, H0620: 4, H0038: 4, L0748: 4, L0754: 4, L0747: 4, L0740: 3, L0756: 3, S0418: 2, S0360: 2, H0024: 2, H0286: 2, H0591: 2, L0598: 2, L0766: 2, L0649: 2, L0789: 2, L0750: 2, L0731: 2, H0170: 1, H0556:		

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430	HTEMQ17	840387	440	446 - 484	944		AR060: 5, AR089: 2 L0748: 6, L0766: 4, H0038: 3, H0616: 3, H0056: 2, H0529: 2, H0519: 2, H0624: 1, H0662: 1, S0418: 1, S0360: 1, H0013: 1, H0581: 1, S0388: 1, H0266: 1, H0591: 1, H0087: 1, H0413: 1, H0561: 1, S0438: 1, L0520: 1, L0769: 1, L0794: 1, L0775: 1, L0666:		

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431	HTENR63	877952	441	132 - 302	945	Pro-22 to Lys-28.	AR089: 19, AR060: 11 L0748: 9, L0777: 6, L0439: 5, L0749: 5, L0766: 4, L0438: 4, L0755: 4, L0752: 3, L0594: 3, S0212: 2, H0014: 2, H0598: 2, H0038: 2, H0100: 2, L0775: 2, S0330: 2, L0754: 2, L0750: 2, L0731: 2, L0758: 2, L0759: 2, L0485: 2, S0192: 2, S0040: 1, S0356: 1, S0046: 1, H0613: 1, H0024: 1, H0373: 1, H0375: 1, H0179: 1, H0032: 1, H0166: 1, H0673: 1, H0591: 1, H0616: 1, H0551: 1, H0412: 1, H0129: 1, H0529: 1, L0761: 1, L0771: 1, L0804: 1, L0784: 1, L0806: 1, L0655: 1, L0783: 1, L0666: 1, H0144: 1, S0126: 1, S0328: 1, H0539: 1, S0152: 1, L0740: 1, L0756: 1, L0779: 1, L0757: 1, H0445: 1, L0599: 1 and S0026: 1.		
432	HTGGM44	842856	442	179 - 433	946		AR246: 5, AR244: 5, AR253: 5, AR309: 4, AR186: 4, AR052: 3, AR206: 3, AR312: 3, AR310: 3, AR204: 3, AR060: 3, AR039: 3, AR055: 3, AR053: 3, AR061: 3, AR243: 3, AR205: 3, AR213: 2,		

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433	HTHBZ06	832477	443	318 - 323	947		AR089: 52, AR060: 22 S0414: 8, L0065: 7, L0005: 6, S0360: 6, H0545: 4, H0648: 4, L0777: 4, L0758: 4, H0657: 3, L0666: 3, L0665: 3, L0779: 3, L0600: 3, S0474: 2, H0674: 2, H0494: 2, L0770: 2, L0769: 2, L0638: 2, L0637: 2, L0768: 2, L0805: 2, L0664: 2, L0438: 2, H0520: 2, L0745: 2, L0749: 2, L0756: 2, L0757: 2, H0484: 1, H0671: 1, S0358: 1, S0132: 1, L0623: 1, H0581: 1, S0214: 1, H0063: 1, H0413: 1, S0422: 1, S0002: 1, L0369: 1, L0796: 1, L0662: 1, L0766: 1, L0803: 1, L0774: 1, L0375: 1, L0656: 1, L0659: 1, L0647: 1, L0663: 1, H0684: 1, S0328: 1, S0350: 1, H0436: 1, L0743: 1, L0751: 1, L0754: 1, L0755: 1, L0731: 1, S0031: 1, L0485: 1, L0608: 1, L0362: 1 and H0352: 1.		
434	HTLAP64	603913	444	173 - 235	948	Ile-8 to Asn-20.	AR089: 6, AR060: 5		

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435	HTLBT80	840045	445	912 - 1301	949	Ser-107 to Ser-116.	AR251: 22, AR273: 18, AR053: 18, AR309: 16, AR310: 16, AR096: 15, AR263: 15, AR312: 14, AR265: 14, AR213: 12, AR052: 12, AR271: 10, AR055: 10, AR243: 9, AR249: 9, AR033: 9, AR253: 9, AR248: 8, AR061: 8, AR186: 7, AR198: 7, AR104: 6, AR089: 6, AR246: 6, AR244: 6, AR202: 5, AR204: 5, AR060: 5, AR206: 4, AR205: 4, AR039: 4, AR194: 1 L0659: 6, H0657: 4,		

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436	HTLDA84	686397	446	225 - 266	950		AR089: 2, AR060: 1 H0253: 1		
437	HTLDN29	790195	447	175 - 276	951		AR060: 5, AR089: 5 L0766: 7, L0731: 4, H0529: 3, L0769: 3, L0806: 3, L0776: 3, L0750: 3, H0618: 2, L0800: 2, L0771: 2, L0774: 2, L0517: 2, L0665: 2, L0751: 2, L0758: 2, L0589: 2, S0424: 2, L0600: 2, H0341: 1, S0358: 1, L0717: 1, H0431: 1, H0497: 1, H0333: 1, H0331: 1, T0039: 1, H0013: 1, H0635: 1, H0156: 1, H0599: 1, H0004: 1, H0253: 1, H0052: 1, H0023: 1, T0010: 1, H0083: 1, H0629: 1, H0266: 1, H0271: 1, H0687: 1, H0688: 1, H0644: 1, H0038: 1, H0634: 1, H0058: 1, H0100: 1, H0494: 1, H0561: 1, L0770: 1, L0372: 1, L0646: 1, L0643: 1, L0794: 1, L0775: 1, L0657: 1, L0782: 1, L0792: 1, L0663: 1, H0547: 1, H0660: 1, H0539: 1, H0521: 1, H0134: 1, S0390: 1, L0439: 1, L0754: 1, L0747: 1, L0779: 1, L0755: 1, L0757: 1, H0445: 1, L0596: 1, L0592: 1, L0599: 1, L0593:		

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438	HTLDU78	637702	448	219 - 245	952		L0758: 3, H0253: 1 and L0779: 1.		
439	HTLEC82	811992	449	530 - 640	953		AR089: 35, AR060: 21 L0766: 10, L0758: 9, H0253: 7, L0731: 7, H0618: 6, L0754: 6, L0756: 6, L0748: 5, L0662: 4, L0747: 4, H0024: 3, L0800: 3, H0521: 3, L0744: 3, S0418: 2, H0250: 2, H0318: 2, H0052: 2, H0188: 2, H0641: 2, L0763: 2, L0761: 2, L0809: 2, H0593: 2, H0689: 2, L0741: 2, L0439: 2, L0750: 2, L0759: 2, L0603: 2, S0218: 1, H0583: 1, H0650: 1, L0005: 1, S0442: 1, S0444: 1, H0580: 1, S0476: 1, H0619: 1, H0351: 1, H0550: 1, H0455: 1, H0331: 1, H0427: 1, S0280: 1, H0546: 1, H0545: 1, H0011: 1, T0010: 1, H0179: 1, H0271: 1, H0028: 1, H0688: 1, H0428: 1, T0023: 1, H0030: 1, H0181: 1, H0617: 1, H0606: 1, H0135: 1, H0038: 1, H0634: 1, T0042: 1, H0494: 1, H0560: 1, H0647: 1, S0002: 1, L4497: 1, L0770: 1, L0769: 1, L0639: 1, L0637: 1, L0764: 1, L0767: 1, L0768: 1, L0794: 1, L0650: 1, L0651: 1, L0378: 1, L0776: 1, L0528: 1, L0666: 1, S0374: 1, S0027: 1, L0755:		

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440	HTLEM16	779133	450	1220 - 1429	954	Arg-29 to Cys-43.	AR089: 48, AR060: 33 L0439: 31, L0741: 24, H0056: 13, L0748: 12, H0052: 9, H0521: 9, L0776: 8, L0744: 8, L0438: 7, L0754: 7, S0474: 6, L0766: 6, L0742: 6, L0731: 6, L0750: 5, S0278: 4, L5566: 4, L0665: 4, H0522: 4, H0556: 3, H0716: 3, H0657: 3, S0358: 3, H0580: 3, H0599: 3, S0049: 3, H0009: 3, H0553: 3, H0641: 3, S0142: 3, L0764: 3, L0659: 3, L0666: 3, S0126: 3, L0751: 3, H0717: 2, H0656: 2, S0029: 2, S0420: 2, S0360: 2, S0007: 2, H0497: 2, H0486: 2, H0618: 2, H0253: 2, H0581: 2, H0046: 2, S0388: 2, T0010: 2, H0039: 2, H0424: 2, L0456: 2, S0036: 2, H0135: 2, H0551: 2, H0623: 2, H0494: 2, S0002: 2, L0770: 2, L0796: 2, L5575: 2, L5565: 2, L0761: 2, L0662: 2, L0650: 2, L0383: 2, L0663: 2, H0682: 2, L0758: 2, S0434: 2, L0596: 2, L0581: 2, S0242: 2, S0114: 1, H0583: 1, L0422: 1, S0116: 1, H0662: 1, H0305: 1, S0418: 1, L0005: 1, S0444: 1, S0046: 1, S0476: 1, H0645: 1, H0437: 1, H0261:		

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441	HTLEV48	723799	451	205 - 825	955	Met-1 to Arg-12, Thr-19 to Leu-27, Asp-72 to Val-79, Arg-89 to Pro-94, Lys-102 to Ser-111, Glu-116 to Arg-122, Lys-134 to Pro-142, Ser-146 to Ser-151, Gly-177 to Asp-196.	S0366: 4, L0623: 1 and H0253: 1.		
		566786	514	91 - 120	1018				
442	HTLFA13	535937	452	209 - 304	956		AR089: 9, AR060: 7, AR310: 6, AR251: 4, AR312: 4, AR033: 4, AR052: 3, AR096: 3, AR186: 3, AR205: 2, AR053: 2, AR061: 2, AR039: 2, AR206: 2, AR309: 2, AR273: 2, AR194: 1 H0253: 2 and S0011: 1.		
443	HTLFI73	846063	453	340 - 411	957		AR060: 5, AR089: 3 S0007: 2, H0253: 2, H0305: 1, T0109: 1 and H0618: 1.		
444	HTLGI89	835069	454	1802 - 1915	958		AR089: 40, AR060: 31 L0758: 16, L0748: 10, H0620: 7, L0731: 6, H0246: 5, S0007: 4, H0253: 4, L0769: 4, L0754: 4, L0638: 3, L0766: 3, L0774: 3, S3014: 3, L0439: 3, H0265: 2, H0556: 2, T0002: 2, S6024: 2, H0656: 2, H0341: 2, S0212: 2, S0376: 2, H0619: 2, H0261: 2, S0222: 2, H0318: 2, H0196: 2,		

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							L0597: 1, H0653: 1 and S0194: 1.		
445	HTLIF11	843506	455	933 - 1049	959	Pro-4 to Gly-9.	H0253: 7, H0618: 4, H0620: 3, L0794: 3, L0769: 2, L0768: 2, L0439: 2, H0327: 1, H0051: 1, S0250: 1, S0036: 1, L0639: 1, L0761: 1, L0635: 1, L0791: 1, L0664: 1, L0438: 1, H0539: 1, L0741: 1, L0747: 1, L0750: 1, L0756: 1 and L0753: 1.		
446	HTLIF12	834946	456	642 - 869	960	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12, H0618: 7, H0253: 5, L0758: 5, L0768: 4, H0411: 2, L0779: 2, L0151: 1, L0697: 1 and S0398: 1.		
447	HTLIF12	842691	457	644 - 871	961	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12, H0618: 7, H0253: 5, L0758: 5, L0768: 4, H0411: 2, L0779: 2, L0151: 1, L0697: 1 and S0398: 1.		
448	HTLIF12	870167	458	644 - 871	962	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12, H0618: 7, H0253: 5, L0758: 5, L0768: 4, H0411: 2, L0779: 2, L0151: 1, L0697: 1 and S0398: 1.		
449	HTLIF12	886780	459	644 - 871	963	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12, H0618: 7, H0253: 5, L0758: 5, L0768: 4, H0411: 2, L0779: 2, L0151: 1, L0697: 1 and S0398: 1.		
450	HTLIF12	891533	460	644 - 871	964	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12,		

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451	HTLIF12	901225	461	644 - 871	965	Phe-30 to Lys-37, Pro-43 to Lys-75.	AR089: 40, AR060: 25 H0616: 14, H0038: 12, H0618: 7, H0253: 5, L0758: 5, L0768: 4, H0411: 2, L0779: 2, L0151: 1, L0697: 1 and S0398: 1.		
452	HTNAM63	566880	462	193 - 285	966		L0439: 6, T0067: 1 and L0438: 1.		
453	HTNBK13	831967	463	534 - 599	967		L0779: 5, L0731: 4, L0593: 4, H0046: 3, L0776: 3, L0666: 3, H0031: 2, L0772: 2, L0774: 2, L0805: 2, H0670: 2, L0439: 2, L0754: 2, L0777: 2, L0758: 2, L0590: 2, T0002: 1, L0717: 1, H0632: 1, L0622: 1, T0082: 1, H0581: 1, H0263: 1, T0115: 1, H0597: 1, L0471: 1, H0012: 1, H0620: 1, H0163: 1, T0067: 1, L0770: 1, L0637: 1, L0388: 1, L0657: 1, L0382: 1, L0664: 1, S0126: 1, H0660: 1, S0378: 1, H0521: 1, L0747: 1, L0750: 1, L0756: 1, L0752: 1, L0755: 1, L0759: 1, S0031: 1, L0599: 1 and L0603: 1.		
454	HTOAI50	638623	464	61 - 144	968		AR089: 6, AR060: 4 H0264: 1 and L0766: 1.		
455	HTOAM11	664508	465	89 - 193	969		AR089: 12, AR060: 7 S0010: 1 and H0264: 1.		
456	HTODH57	823126	466	228 - 443	970	Tyr-21 to Phe-26, Glu-58 to Trp-66.	AR060: 5, AR089: 2 H0264: 1		

457	HTODH83	580884	467	103 - 201	971		AR060: 4, AR089: 1 H0264: 1		
458	HTOEV16	853616	468	201 - 557	972	Arg-60 to Ala-69, Ala-93 to Cys-99.	AR060: 5, AR089: 3 H0506: 66, H0555: 28, S0354: 20, H0264: 18, H0087: 17, H0581: 16, S0116: 15, H0486: 13, H0040: 12, H0063: 12, S0358: 10, H0597: 8, H0039: 7, H0488: 6, L0751: 5, H0421: 4, L0744: 4, H0255: 3, S0356: 3, S0408: 3, H0156: 3, S0182: 3, S0432: 3, H0427: 2, H0108: 2, H0575: 2, T0023: 2, S0382: 2, H0538: 2, L0769: 2, L0662: 2, L0439: 2, L0592: 2, S0462: 2, H0624: 1, S0430: 1, S0212: 1, H0254: 1, S0376: 1, H0489: 1, H0393: 1, H0550: 1, H0331: 1, H0025: 1, H0042: 1, H0004: 1, H0618: 1, T0071: 1, H0596: 1, H0231: 1, H0545: 1, H0086: 1, S0388: 1, S0051: 1, H0355: 1, H0510: 1, H0031: 1, H0598: 1, H0090: 1, H0591: 1, H0561: 1, S0370: 1, S0464: 1, L0770: 1, L0372: 1, L0508: 1, S0374: 1, H0547: 1, H0689: 1, H0215: 1, S0392: 1, L0747: 1, L0731: 1, L0758: 1, H0445: 1, H0595: 1, S0456: 1, S0446: 1 and L0600: 1.		
459	HTOGR38	824639	469	314 - 442	973		AR089: 13, AR060: 11 L0777: 3, L0748: 2,		

							H0264: 1, L0794: 1 and L0740: 1.		
460	HTOHO21	732808	470	439 - 630	974	Ile-35 to Cys-42.	H0556: 3 and H0264: 1.		
461	HTOHQ05	853621	471	198 - 362	975		AR252: 4, AR089: 3, AR201: 3, AR205: 2, AR272: 2, AR096: 2 H0264: 1		
462	HTOJL95	806212	472	134 - 310	976	Gly-26 to Val-32.	AR089: 10, AR060: 7 H0264: 5, S0114: 3, S0134: 2, S0428: 2, H0381: 1, H0255: 1, H0402: 1, H0339: 1, H0486: 1, H0318: 1, H0581: 1, H0615: 1, H0090: 1, S0426: 1, L0369: 1, L0769: 1, L0779: 1, H0444: 1 and H0445: 1.		
463	HTOJL95	762851	473	221 - 397	977	Gly-26 to Val-32.	AR089: 10, AR060: 7 H0264: 5, S0114: 3, S0134: 2, S0428: 2, H0381: 1, H0255: 1, H0402: 1, H0339: 1, H0486: 1, H0318: 1, H0581: 1, H0615: 1, H0090: 1, S0426: 1, L0369: 1, L0769: 1, L0779: 1, H0444: 1 and H0445: 1.		
464	HTPDU17	840596	474	52 - 153	978		AR060: 2, AR089: 2 H0677: 19, L0759: 6, L0748: 5, H0040: 4, L0438: 3, L0754: 3, L0750: 3, L0777: 3, H0255: 2, H0617: 2, H0038: 2, H0529: 2, L0769: 2, L0761: 2, L0662: 2, L0666: 2, L0749: 2, L0758: 2, L0595: 2, H0265: 1, H0556: 1, S0134: 1, H0650: 1, H0657: 1, S0358: 1, S0045: 1, H0411: 1, H0392: 1, L0468: 1, H0587:		

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465	HTSFJ32	637720	475	93 - 149	979	Leu-12 to Cys-18.	AR089: 3, AR060: 2 H0556: 1, S0114: 1, H0087: 1, H0538: 1, H0695: 1 and L0774: 1.		
466	HTTCB60	853401	476	84 - 884	980	Ser-83 to Asp-88, Val-166 to Gly-181, Pro-193 to Ala-199, Glu-235 to Gln-250.	L0794: 10, L0809: 9, L0750: 9, L0791: 7, L0747: 7, L0758: 6, L0759: 6, H0620: 5, L0749: 5, S0358: 4, H0135: 4, L0769: 4, L0800: 4, L0805: 4, L0659: 4, H0556: 3, L0471: 3, H0040: 3, L0804: 3, S0360: 2, H0393: 2, H0550: 2, H0592: 2, H0333: 2, S0049: 2, H0124: 2, S0438: 2, L0771: 2, L0662: 2, L0803: 2, L4501: 2, H0547: 2, L0779: 2, L0755: 2, L0731: 2, S0434: 2, L0603: 2, H0506: 2, H0713: 1, H0717: 1, H0294: 1, H0662: 1,		

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467	HTTEE41	840950	477	1171 - 1197	981		AR089: 25, AR060: 17 H0052: 24, H0040: 17, L0758: 15, H0251: 14, L0769: 9, L0439: 9, L0770: 8, L0748: 8, L0731: 8, H0543: 8, H0423: 8, H0264: 7, H0494: 7, L0776: 7, L0659: 7, L0666: 7, H0144: 7, H0659: 7, H0436: 7, L0747: 7, L0749: 7, L0757: 7, L0592: 7, S0222: 6, H0038: 6, H0529: 6, L0662: 6, H0435: 6, H0013: 5, H0318: 5, H0581: 5, H0012:		

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468	HTTEZ02	702027	478	250 - 336	982	Arg-23 to Leu-28.	AR089: 16, AR060: 11 L0777: 12, L0758: 9, L0439: 8, L0740: 7, L0779: 7, L0595: 7, H0038: 6, H0040: 6, L0748: 6, L0747: 6, L0659: 5, L0761: 4, L0776: 4, L0663: 4, L0565:		

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469	HTWEH94	561680	479	66 - 311	983		AR089: 3, AR060: 2 H0436: 1		
470	HTXBD09	839429	480	350 - 388	984		AR089: 6, AR060: 6 L0665: 11, L0439: 10, L0751: 7, L0777: 7, H0265: 6, L0662: 6, L0766: 6, L0769: 5, L0771: 5, L0758: 5, H0441: 4, L0774: 4, H0486: 3, H0052: 3, L0764: 3, L0659: 3, L0748: 3, L0740: 3, L0731: 3, L0757: 3, L0601: 3, H0556: 2, S0358: 2, S0007: 2, H0013: 2, H0545: 2, H0050: 2, H0012: 2, L0763: 2, L0770: 2, L0363: 2, L0776: 2, L0663: 2, L0438: 2, H0435: 2, H0555: 2, L0750: 2, L0756: 2, L0752: 2, H0686: 1, H0716: 1, S0114: 1, H0650: 1, H0656: 1, S0116: 1, H0341: 1, H0661: 1, H0662: 1, S0420: 1, S0356: 1, S0444: 1, H0675: 1, S0046: 1, H0619: 1, L0717: 1, H0549: 1, S0222: 1, H0587: 1, L0622: 1, T0039: 1, S0280: 1, H0505: 1, H0327: 1, H0046: 1, H0150: 1, H0620: 1, H0179: 1, S0250: 1, S0003: 1, H0428: 1, H0424: 1, H0553: 1, L0055: 1, H0038: 1, H0040:		

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471	HTXDB22	853407	481	229 - 297	985		AR089: 9, AR060: 8 H0521: 28, H0271: 21, S0360: 12, L0777: 12, H0179: 11, L0493: 11, L0766: 10, H0423: 9, H0581: 8, H0457: 8, S0126: 8, L0752: 8, L0731: 7, H0584: 6, S0422: 6, H0547: 6, H0522: 6, L0748: 6, L0749: 6, H0543: 6, S0356: 5, H0052: 5, L0471: 5, H0266: 5, H0617: 5, H0529: 5, L0805: 5, L0776: 5, L0655: 5, H0520: 5, H0659: 5, L0439: 5, L0754: 5, L0779: 5, L0594: 5, H0265: 4, S0444: 4, S0408: 4,		

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472	HTXDC38	801935	482	359 - 415	986		AR253: 13, AR243: 12, AR254: 11, AR060: 10, AR250: 10, AR204: 9, AR061: 9, AR246: 9, AR205: 8, AR309: 8, AR039: 7, AR201: 7, AR089: 6, AR198: 6,		

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							1 and H0422: 1.		
473	HTXDC77	844258	483	65 - 520	987		AR089: 168, AR060: 110 L0659: 33, L0665: 27, L0666: 19, L0664: 19, S0360: 17, S0344: 17, L0648: 17, S0358: 16, L0655: 14, L0596: 13, L0751: 12, L0662: 11, L0663: 10, L0740: 9, L0775: 8, L0599: 8, S0376: 7, H0046: 7, H0486: 6, H0597: 6, S0126: 6, L0439: 6, L0752: 6, S0116: 5, S0140: 5, H0581: 5, S0328: 5, L0748: 5, H0543: 5, H0423: 5, H0657: 4, S0212: 4, H0617: 4, H0087: 4, S0372: 4, L0374: 4, L0651: 4, H0555: 4, L0744: 4, L0754: 4, L0747: 4, T0049: 3, S0278: 3, H0031: 3, H0641: 3, S0144: 3, L0646: 3, L0375: 3, L0776: 3, L0606: 3, L0661: 3, L0657: 3, S0428: 3, H0518: 3, H0521: 3, S3014: 3, L0742: 3, L0743: 3, L0750: 3, L0753: 3, L0362: 3, L0601: 3, S0026: 3, H0265: 2, H0556: 2, T0002: 2, H0686: 2, S0114: 2, H0402: 2, S0410: 2, S0300: 2, T0060: 2, H0575: 2, H0274: 2, H0318: 2, H0085: 2, H0231: 2, H0083: 2, H0271: 2, H0188: 2, H0688: 2, H0553: 2, H0068: 2, H0509: 2, S0142: 2, S0002: 2, L0369: 2,		

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474	HTXDD61	853408	484	49 - 447	988	Pro-70 to Ser-89, Ser-92 to Ser-115.	AR060: 2, AR089: 2 L0748: 10, H0556: 5, L0809: 5, L0777: 5, L0769: 4, H0265: 3, H0052: 3, S0206: 3, S0358: 2, H0087: 2, L0764: 2, L0648: 2, L0805: 2, L0787: 2, L0439: 2, L0747: 2, H0445: 2, L0601: 2, H0542: 2, S0218: 1, L0426: 1, S0116: 1, H0484: 1, H0619: 1, H0393: 1, H0550: 1, H0370: 1, H0486: 1, H0618: 1, H0581: 1, H0178: 1, H0123: 1, H0050: 1, H0083: 1, H0510: 1, H0030: 1, H0553: 1, L0055: 1, H0616: 1, H0494: 1, L0763: 1, L0770: 1, L0638: 1, L0639: 1, L0643: 1, L0773: 1, L0655: 1, L0659: 1, L0666: 1, L0664: 1, H0593: 1, H0659: 1, H0539: 1, S0378: 1, H0696: 1, L0759: 1, L0361: 1 and H0423: 1.		
475	HTXDG92	658730	485	216 - 416	989		AR089: 26, AR060: 17		

							L0777: 11, L0754: 8, H0618: 7, L0758: 7, L0438: 6, H0144: 5, L0747: 5, H0556: 4, H0059: 4, L0439: 4, L0601: 4, H0265: 3, S0410: 3, H0253: 3, H0052: 3, H0620: 3, H0617: 3, L0764: 3, L0768: 3, L0806: 3, L0744: 3, L0749: 3, L0731: 3, H0583: 2, H0341: 2, S0358: 2, S0046: 2, S0222: 2, H0013: 2, H0069: 2, S0049: 2, H0150: 2, H0087: 2, L0351: 2, T0041: 2, H0529: 2, L0771: 2, L0773: 2, L0662: 2, L0766: 2, L0803: 2, L0809: 2, L0793: 2, L0665: 2, H0547: 2, H0519: 2, H0659: 2, L0742: 2, L0748: 2, H0542: 2, S0040: 1, H0717: 1, H0716: 1, S0114: 1, T0049: 1, H0657: 1, H0656: 1, H0381: 1, H0663: 1, S0360: 1, H0722: 1, S0007: 1, S0132: 1, S0300: 1, S0278: 1, H0261: 1, H0550: 1, H0431: 1, H0392: 1, H0486: 1, T0114: 1, S0010: 1, H0581: 1, H0374: 1, H0327: 1, H0545: 1, H0457: 1, H0012: 1, H0024: 1, H0015: 1, H0510: 1, H0594: 1, H0188: 1, H0292: 1, H0286: 1, H0622: 1, H0553: 1, H0181: 1, H0135: 1, H0163: 1, H0040: 1, H0063: 1, H0413: 1, H0100: 1, H0561:		

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476	HTXET11	581521	486	178 - 267	990		AR060: 5, AR089: 3 H0265: 1		
477	HTXFA72	853410	487	192 - 281	991		AR089: 24, AR060: 12 H0265: 1		
478	HTXJY08	637774	488	108 - 158	992		AR060: 2, AR089: 1 H0556: 1, H0036: 1, H0590: 1, H0024: 1, H0100: 1, L0769: 1, L0667: 1, L0438: 1, L0740: 1 and L0777: 1.		
479	HTXKF95	834438	489	330 - 566	993	Met-1 to Pro-6, Gly-73 to Thr-78.	AR309: 6, AR312: 5, AR053: 5, AR271: 4, AR060: 4, AR308: 4, AR246: 4, AR263: 4, AR213: 4, AR272: 3, AR212: 3, AR264: 3, AR243: 3, AR089: 3, AR096: 3, AR104: 2, AR061: 2, AR201: 2, AR204: 2, AR033: 2, AR055: 2, AR311: 2, AR252: 1		

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480	HTXMZ07	834881	490	319 - 432	994	Pro-19 to Ser-28.	AR060: 7, AR089: 4 L0439: 6, H0556: 2, S0007: 2, L0744: 2, L0740: 2, L0731: 2, S0442: 1, L0021: 1, H0618: 1, H0253: 1, H0041: 1, L0770: 1, L0800: 1, L0766: 1, L0803: 1, L0375: 1, L0807: 1, L0382: 1, L0791: 1, L0793: 1, L0352: 1, S0432: 1, L0741: 1 and L0779: 1.		
481	HUFCL31	801938	491	287 - 367	995		AR060: 26, AR089: 7 L0764: 5, L0771: 5, H0506: 4, L0374: 3, S0434: 3, S0356: 1, S0408: 1, H0264: 1, L0372: 1, L0783: 1, L0532: 1 and L0663: 1.		

482	HUKBT67	844446	492	273 - 392	996	Ser-32 to Arg-39.	AR089: 14, AR060: 9 H0052: 13, S0360: 8, L0748: 8, H0619: 6, L0659: 6, L0665: 6, L0759: 6, L0789: 5, L0743: 5, L0752: 5, S0346: 4, H0059: 4, L0662: 4, L0805: 4, H0521: 4, L0717: 3, H0599: 3, H0644: 3, L0761: 3, L0776: 3, S0028: 3, L0744: 3, L0754: 3, L0749: 3, L0731: 3, L0757: 3, S0001: 2, S0354: 2, H0261: 2, H0586: 2, S0010: 2, H0620: 2, L0771: 2, L0804: 2, L0774: 2, L0806: 2, L0809: 2, L0664: 2, H0547: 2, H0539: 2, H0555: 2, L0747: 2, L0750: 2, L0758: 2, S0434: 2, L0596: 2, L0604: 2, H0171: 1, S0040: 1, H0713: 1, H0656: 1, S0212: 1, L0005: 1, S0356: 1, H0728: 1, H0733: 1, S0046: 1, S0278: 1, H0370: 1, H0392: 1, H0602: 1, H0592: 1, H0574: 1, H0013: 1, S0280: 1, H0575: 1, T0082: 1, H0581: 1, H0544: 1, H0046: 1, H0009: 1, H0081: 1, H0051: 1, H0266: 1, H0179: 1, H0290: 1, H0286: 1, S0250: 1, S0366: 1, S0036: 1, H0135: 1, H0591: 1, H0038: 1, H0551: 1, H0264: 1, H0488: 1, T0004: 1, H0100: 1, H0429: 1, H0334: 1, H0386: 1, S0144: 1,		

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483	HUKDF20	566823	493	214 - 315	997		AR060: 6, AR089: 3 H0266: 1 and H0059: 1.		
484	HUKDY82	570896	494	187 - 285	998		AR089: 14, AR060: 8 S0053: 4, H0673: 3, H0618: 2, H0179: 2, H0674: 2, S0216: 2, H0521: 2, S0031: 2, H0556: 1, S0116: 1, H0305: 1, H0619: 1, H0550: 1, H0069: 1, H0635: 1, H0318: 1, H0309: 1, H0083: 1, H0271: 1, H0090: 1, H0634: 1, H0059: 1, S0002: 1, S0052: 1, S0428: 1, H0144: 1, S0152: 1 and L0740: 1.		
485	HUSCJ14	894699	495	74 - 661	999	Phe-166 to Arg-174, Ser-191 to Tyr-196.	AR245: 5, AR194: 4, AR061: 3, AR251: 3, AR201: 2, AR205: 2, AR198: 2, AR039: 2, AR055: 2, AR250: 2, AR204: 2, AR060: 1, AR312: 1, AR311: 1, AR243: 1, AR186: 1, AR089: 1, AR263: 1		

							L0777: 8, L0766: 7, L0741: 7, L0439: 7, L0748: 5, L0754: 5, L0744: 4, L0757: 4, S0192: 4, H0677: 4, H0556: 3, S0360: 3, S0410: 3, H0013: 3, H0052: 3, L0769: 3, L0775: 3, L0776: 3, L0756: 3, L0752: 3, L0604: 3, H0265: 2, S0040: 2, H0599: 2, H0545: 2, H0266: 2, H0030: 2, H0617: 2, H0135: 2, L0771: 2, L0662: 2, L0806: 2, L0805: 2, L0659: 2, L0666: 2, L0665: 2, H0520: 2, H0547: 2, H0519: 2, H0659: 2, S0404: 2, L0743: 2, L0758: 2, L0596: 2, L0605: 2, L0485: 2, H0171: 1, H0713: 1, S0134: 1, S0218: 1, H0657: 1, H0656: 1, S0212: 1, H0663: 1, S0420: 1, S0408: 1, S0132: 1, S0476: 1, H0393: 1, H0587: 1, T0040: 1, T0060: 1, H0575: 1, H0309: 1, H0009: 1, L0471: 1, H0620: 1, H0510: 1, H0290: 1, S0250: 1, S0022: 1, T0023: 1, L0055: 1, H0634: 1, H0488: 1, H0268: 1, T0041: 1, T0042: 1, H0538: 1, S0210: 1, L0763: 1, L0639: 1, L0764: 1, L0794: 1, L0649: 1, L0804: 1, L0650: 1, L0774: 1, L0809: 1, L0793: 1, L0664: 1, H0144: 1, H0593: 1, S0122: 1, H0435: 1,		

							H0521: 1, S0406: 1, H0555: 1, L0740: 1, L0747: 1, L0749: 1, L0779: 1, L0731: 1, L0759: 1, S0031: 1, S0434: 1, S0436: 1, L0601: 1, S0106: 1, H0665: 1, H0667: 1 and S0276: 1.		
486	HUSGL67	792637	496	350 - 493	1000	Met-1 to Tyr-8, Gln-27 to Gln-38.	AR252: 82, AR250: 77, AR253: 70, AR254: 37, AR309: 22, AR264: 17, AR308: 16, AR312: 15, AR263: 15, AR096: 13, AR311: 11, AR271: 10, AR213: 8, AR243: 7, AR245: 7, AR053: 7, AR246: 6, AR272: 6, AR089: 6, AR212: 6, AR197: 5, AR198: 5, AR204: 4, AR033: 4, AR061: 4, AR060: 3, AR205: 3, AR039: 3, AR201: 3, AR104: 3, AR055: 2 L0766: 4, S0358: 3, H0266: 3, S0356: 2, S0045: 2, S0222: 2, H0616: 2, L0794: 2, L0655: 2, H0672: 2, L0777: 2, L0731: 2, H0422: 2, H0171: 1, H0657: 1, S0116: 1, H0341: 1, H0483: 1, H0449: 1, S0360: 1, H0587: 1, H0497: 1, H0486: 1, H0250: 1, S0010: 1, H0421: 1, H0327: 1, H0057: 1, H0014: 1, H0375: 1, S6028: 1, H0271: 1, S0003: 1, S0214: 1, H0328: 1, T0006: 1, H0644: 1, H0032:		

							1, H0090: 1, H0038: 1, H0087: 1, H0264: 1, H0268: 1, H0412: 1, S0422: 1, H0529: 1, L0521: 1, L0803: 1, L0659: 1, L0666: 1, H0710: 1, H0518: 1, H0521: 1, S0176: 1, S0406: 1, S3014: 1, L0439: 1, L0758: 1 and H0543: 1.		
487	HUSGU40	684975	497	500 - 640	1001	Arg-21 to Ser-27, Ile-36 to Asp-41.	AR089: 34, AR060: 23		
488	HUSIR18	762858	498	83 - 151	1002		L0748: 4, H0622: 3, L0777: 3, H0624: 2, H0013: 2, H0520: 2, H0539: 2, L0439: 2, L0754: 2, L0747: 2, L0757: 2, L0758: 2, L0593: 2, L0002: 1, H0664: 1, H0580: 1, S0007: 1, H0497: 1, H0333: 1, H0599: 1, H0581: 1, L0483: 1, H0598: 1, H0040: 1, H0412: 1, L0351: 1, T0041: 1, L0769: 1, L0771: 1, L0662: 1, L0767: 1, L0768: 1, L0766: 1, L0381: 1, L0806: 1, L0656: 1, L0659: 1, L0809: 1, L0663: 1, L0665: 1, H0672: 1, S0152: 1, L0740: 1, L0749: 1, L0750: 1, L0779: 1, L0752: 1, L0480: 1, L0591: 1 and H0543: 1.		
489	HUVDJ48	564853	499	196 - 213	1003		AR060: 5, AR089: 3 H0393: 1, H0056: 1 and L0662: 1.		
490	HWAAI12	830432	500	223 - 312	1004		AR089: 4, AR060: 2 H0547: 12, L0794: 10, H0251: 9, L0439: 8, L0731:		

							8, L0747: 7, L0438: 6, H0351: 5, L0750: 5, S0356: 4, L0768: 4, L0766: 4, L0805: 4, L0809: 4, L0777: 4, L0758: 4, L0596: 4, S0410: 3, H0013: 3, H0009: 3, H0594: 3, T0006: 3, H0124: 3, T0041: 3, H0529: 3, L0769: 3, L0666: 3, H0144: 3, H0520: 3, L0749: 3, H0661: 2, H0305: 2, S0360: 2, L0103: 2, H0581: 2, S0049: 2, H0052: 2, L0157: 2, L0471: 2, H0031: 2, H0087: 2, H0100: 2, S0344: 2, L0763: 2, L0761: 2, L0662: 2, L0803: 2, L0806: 2, L0664: 2, H0436: 2, S0028: 2, L0742: 2, L0756: 2, L0752: 2, L0605: 2, L0595: 2, H0543: 2, H0556: 1, T0002: 1, S0040: 1, H0717: 1, H0716: 1, H0294: 1, S0134: 1, H0341: 1, H0402: 1, S0354: 1, L0717: 1, S0278: 1, L0394: 1, H0549: 1, S0222: 1, H0333: 1, L0622: 1, H0486: 1, H0250: 1, H0635: 1, H0575: 1, S0010: 1, H0421: 1, H0085: 1, H0597: 1, H0545: 1, H0566: 1, H0620: 1, H0271: 1, H0687: 1, H0615: 1, H0622: 1, H0673: 1, H0674: 1, H0412: 1, H0413: 1, H0056: 1, T0042: 1, H0130: 1, H0646: 1, S0144: 1, S0208: 1, L0770:		

							1, L0796: 1, L0667: 1, L0772: 1, L0373: 1, L0372: 1, L0800: 1, L0645: 1, L0764: 1, L0648: 1, L0767: 1, L0650: 1, L0657: 1, L0517: 1, L0789: 1, L0790: 1, L0665: 1, H0690: 1, H0658: 1, H0670: 1, H0672: 1, S0378: 1, S0380: 1, H0521: 1, S3012: 1, S0390: 1, S0027: 1, L0743: 1, L0779: 1, L0755: 1, L0759: 1, S0031: 1, S0436: 1, L0601: 1, S0276: 1, H0542: 1 and S0424: 1.		
491	HWBBQ70	689121	501	222 - 353	1005	Ala-21 to Ser-31.	AR060: 2, AR089: 1 L0717: 2, H0580: 1, S0222: 1, L0662: 1, H0436: 1, L0748: 1, H0445: 1 and S0308: 1.		
492	HWBCN36	722259	502	378 - 650	1006	Lys-45 to Pro-51, Arg-80 to Arg-85.	AR060: 1, AR089: 1 H0580: 1		
493	HWBDJ08	762860	503	253 - 405	1007	Ser-30 to Gly-36.	AR089: 11, AR060: 5 H0635: 7, L0794: 6, H0556: 4, S0414: 4, H0521: 4, H0634: 3, L0779: 3, H0265: 2, S0134: 2, S0360: 2, H0619: 2, H0069: 2, H0575: 2, H0688: 2, H0056: 2, S0002: 2, L0665: 2, S0216: 2, H0519: 2, L0751: 2, L0758: 2, L0593: 2, H0422: 2, S0114: 1, S0116: 1, H0300: 1, S0356: 1, H0580: 1, S0045: 1, S0046: 1, H0643: 1, H0250: 1, H0581: 1, S0049: 1, L0045: 1, H0622: 1, H0031: 1,		

							H0644: 1, H0551: 1, H0264: 1, H0623: 1, H0641: 1, H0646: 1, L0763: 1, L0536: 1, L0766: 1, L0653: 1, L0655: 1, H0134: 1, L0777: 1, L0755: 1, H0542: 1, H0543: 1 and H0423: 1.		
494	HWBFX16	827312	504	267 - 278	1008		AR060: 184, AR089: 165 S0114: 1 and H0580: 1.		
495	HWDAC26	821335	505	242 - 349	1009		AR089: 61, AR060: 49, AR198: 5, AR194: 4, AR096: 3, AR310: 3, AR265: 3, AR213: 2, AR312: 2, AR249: 2, AR186: 2, AR053: 2, AR052: 2, AR104: 2, AR205: 1, AR039: 1 H0580: 1, S0300: 1, H0600: 1, L0783: 1, L0438: 1, L0439: 1 and L0758: 1.		
496	HWDAG96	796743	506	866 - 964	1010		AR060: 28, AR089: 14 H0556: 19, H0265: 15, S0418: 10, S0358: 9, S0440: 9, L0755: 9, S0420: 8, L0752: 7, H0253: 6, L0751: 6, L0747: 6, L0750: 6, L0596: 6, S0212: 5, H0618: 5, H0545: 5, H0012: 5, H0617: 5, H0413: 5, L0740: 5, L0601: 5, H0295: 4, S0360: 4, H0039: 4, H0494: 4, H0641: 4, L0764: 4, L0776: 4, S0406: 4, L0758: 4, H0445: 4, H0657: 3, H0483: 3, S0356: 3, S0376: 3, S0408: 3, S0346: 3, H0040: 3, S0344: 3, L0637: 3, H0547: 3, H0658: 3,		

							H0660: 3, S0328: 3, H0522: 3, L0743: 3, L0749: 3, L0756: 3, L0731: 3, L0757: 3, S0040: 2, H0713: 2, H0294: 2, H0341: 2, H0484: 2, H0661: 2, H0305: 2, H0125: 2, H0580: 2, H0586: 2, H0587: 2, H0052: 2, H0046: 2, H0009: 2, H0081: 2, H0620: 2, H0266: 2, H0124: 2, H0135: 2, H0551: 2, H0100: 2, L0646: 2, L0768: 2, L0774: 2, L0806: 2, H0435: 2, H0539: 2, L0748: 2, L0754: 2, L0588: 2, L0589: 2, L0608: 2, L0593: 2, H0543: 2, S0384: 2, H0170: 1, H0140: 1, H0716: 1, H0650: 1, H0656: 1, H0254: 1, H0300: 1, H0638: 1, S0410: 1, H0637: 1, S0045: 1, S0046: 1, S0476: 1, H0619: 1, S0278: 1, S0222: 1, H0600: 1, H0497: 1, H0632: 1, H0559: 1, H0013: 1, H0069: 1, H0042: 1, H0706: 1, S0010: 1, S0182: 1, H0318: 1, H0263: 1, T0110: 1, L0471: 1, H0024: 1, H0416: 1, H0290: 1, H0292: 1, H0286: 1, S0250: 1, H0622: 1, L0194: 1, L0483: 1, T0006: 1, H0213: 1, H0644: 1, L0142: 1, H0181: 1, H0606: 1, L0055: 1, H0090: 1, H0038: 1, H0616: 1, T0067: 1, H0488: 1, H0412: 1,		

							H0056: 1, T0041: 1, T0042: 1, L0475: 1, H0396: 1, S0144: 1, S0142: 1, S0210: 1, S0002: 1, H0695: 1, L0763: 1, L0770: 1, L0769: 1, L0639: 1, L0643: 1, L0662: 1, L0649: 1, L0381: 1, L0388: 1, L0533: 1, L0650: 1, L0775: 1, L0523: 1, L0378: 1, L0657: 1, L0517: 1, L0782: 1, L0783: 1, L0519: 1, L0666: 1, L0663: 1, L0665: 1, H0698: 1, L0438: 1, H0519: 1, H0689: 1, H0682: 1, H0684: 1, H0659: 1, H0648: 1, H0672: 1, S0330: 1, L0602: 1, H0521: 1, S0044: 1, H0134: 1, H0478: 1, H0626: 1, S3014: 1, S0027: 1, S0028: 1, S0206: 1, L0745: 1, L0759: 1, S0031: 1, S0434: 1, L0597: 1, L0599: 1, S0026: 1, H0423: 1, H0422: 1, S0424: 1, H0506: 1 and H0352: 1.		
497	HWDAJ01	794016	507	288 - 362	1011	Pro-17 to Ser-24.	AR060: 2 H0600: 1		
498	HWHPB78	740778	508	200 - 400	1012	Gln-25 to Leu-30.	H0437: 2, H0587: 2, H0494: 2, L0769: 2, H0547: 2, S0028: 2, L0439: 2, L0593: 2, H0556: 1, H0657: 1, H0662: 1, H0125: 1, S0418: 1, H0619: 1, H0618: 1, H0253: 1, H0318: 1, H0052: 1, H0009: 1, H0172: 1, H0266: 1, H0135: 1, H0529: 1, L0438: 1, H0539:		

							1, H0521: 1, S0037: 1, S0424: 1, H0506: 1 and H0008: 1.		
499	HYABC84	789854	509	1015 - 1203	1013	Pro-3 to Ala-8.	AR089: 10, AR060: 6 L0665: 10, L0754: 6, L0438: 5, L0751: 5, L0777: 5, L0752: 5, L0755: 4, L0758: 4, S0046: 3, H0213: 3, L0769: 3, L0667: 3, L0771: 3, L0662: 3, L0659: 3, H0539: 3, L0747: 3, L0757: 3, S0276: 3, S0418: 2, H0208: 2, S0045: 2, H0428: 2, H0424: 2, H0553: 2, H0412: 2, L0638: 2, L0764: 2, L0768: 2, L0649: 2, L0666: 2, L0663: 2, H0547: 2, H0521: 2, S0404: 2, L0743: 2, L0744: 2, L0439: 2, L0756: 2, L0759: 2, L0485: 2, L0599: 2, S0040: 1, S0342: 1, T0049: 1, H0583: 1, H0657: 1, S0212: 1, H0580: 1, S0132: 1, H0261: 1, H0550: 1, H0370: 1, H0586: 1, H0333: 1, H0013: 1, H0250: 1, S0280: 1, H0575: 1, H0618: 1, S0049: 1, H0052: 1, H0009: 1, L0471: 1, H0620: 1, L0163: 1, S0388: 1, S0051: 1, T0010: 1, H0408: 1, H0239: 1, H0266: 1, H0179: 1, H0271: 1, H0124: 1, S0366: 1, H0135: 1, H0059: 1, T0042: 1, H0509: 1, H0641: 1, S0210: 1, H0529: 1, L0639: 1, L0637:		

							1, L0761: 1, L0646: 1, L0643: 1, L0773: 1, L0650: 1, L0657: 1, L0635: 1, L0383: 1, L0790: 1, L0792: 1, L0664: 1, S0052: 1, H0691: 1, H0593: 1, H0435: 1, H0672: 1, H0696: 1, H0576: 1, L0748: 1, L0745: 1, L0750: 1, L0731: 1, H0707: 1, L0596: 1, L0591: 1, L0592: 1, L0593: 1, L0595: 1, H0667: 1, H0422: 1 and L0600: 1.		
500	HYABC84	865064	510	1080 - 1268	1014	Pro-3 to Ala-8.	AR089: 10, AR060: 6 L0665: 10, L0754: 6, L0438: 5, L0751: 5, L0777: 5, L0752: 5, L0755: 4, L0758: 4, S0046: 3, H0213: 3, L0769: 3, L0667: 3, L0771: 3, L0662: 3, L0659: 3, H0539: 3, L0747: 3, L0757: 3, S0276: 3, S0418: 2, H0208: 2, S0045: 2, H0428: 2, H0424: 2, H0553: 2, H0412: 2, L0638: 2, L0764: 2, L0768: 2, L0649: 2, L0666: 2, L0663: 2, H0547: 2, H0521: 2, S0404: 2, L0743: 2, L0744: 2, L0439: 2, L0756: 2, L0759: 2, L0485: 2, L0599: 2, S0040: 1, S0342: 1, T0049: 1, H0583: 1, H0657: 1, S0212: 1, H0580: 1, S0132: 1, H0261: 1, H0550: 1, H0370: 1, H0586: 1, H0333: 1, H0013: 1, H0250: 1, S0280: 1, H0575: 1, H0618:		

							1, S0049: 1, H0052: 1, H0009: 1, L0471: 1, H0620: 1, L0163: 1, S0388: 1, S0051: 1, T0010: 1, H0408: 1, H0239: 1, H0266: 1, H0179: 1, H0271: 1, H0124: 1, S0366: 1, H0135: 1, H0059: 1, T0042: 1, H0509: 1, H0641: 1, S0210: 1, H0529: 1, L0639: 1, L0637: 1, L0761: 1, L0646: 1, L0643: 1, L0773: 1, L0650: 1, L0657: 1, L0635: 1, L0383: 1, L0790: 1, L0792: 1, L0664: 1, S0052: 1, H0691: 1, H0593: 1, H0435: 1, H0672: 1, H0696: 1, H0576: 1, L0748: 1, L0745: 1, L0750: 1, L0731: 1, H0707: 1, L0596: 1, L0591: 1, L0592: 1, L0593: 1, L0595: 1, H0667: 1, H0422: 1 and L0600: 1.		

[81] The first column in Table 1B provides the gene number in the application corresponding to the clone identifier. The second column in Table 1B provides a unique "Clone ID NO:Z" for a cDNA clone related to each contig sequence disclosed in Table 1B. This clone ID references the cDNA clone which contains at least the 5' most sequence of the assembled contig and at least a portion of SEQ ID NO:X was determined by directly sequencing the referenced clone. The reference clone may have more sequence than described in the sequence listing or the clone may have less. In the vast majority of cases, however, the clone is believed to encode a full-length polypeptide. In the case where a clone is not full-length, a full-length cDNA can be obtained by methods described elsewhere herein.

[82] The third column in Table 1B provides a unique "Contig ID" identification for each contig sequence. The fourth column provides the "SEQ ID NO:" identifier for each of the contig polynucleotide sequences disclosed in Table 1B. The fifth column, "ORF (From-To)", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence "SEQ ID NO:X" that delineate the preferred open reading frame (ORF) shown in the sequence listing and referenced in Table 1B, column 6, as SEQ ID NO:Y. Where the nucleotide position number "To" is lower than the nucleotide position number "From", the preferred ORF is the reverse complement of the referenced polynucleotide sequence.

[83] The sixth column in Table 1B provides the corresponding SEQ ID NO:Y for the polypeptide sequence encoded by the preferred ORF delineated in column 5. In one embodiment, the invention provides an amino acid sequence comprising, or alternatively consisting of, a polypeptide encoded by the portion of SEQ ID NO:X delineated by "ORF (From-To)". Also provided are polynucleotides encoding such amino acid sequences and the complementary strand thereto.

[84] Column 7 in Table 1B lists residues comprising epitopes contained in the polypeptides encoded by the preferred ORF (SEQ ID NO:Y), as predicted using the algorithm of Jameson and Wolf, (1988) Comp. Appl. Biosci. 4:181-186. The Jameson-

Wolf antigenic analysis was performed using the computer program PROTEAN (Version 3.11 for the Power MacIntosh, DNASTAR, Inc., 1228 South Park Street Madison, WI). In specific embodiments, polypeptides of the invention comprise, or alternatively consist of, at least one, two, three, four, five or more of the predicted epitopes as described in Table 1B. It will be appreciated that depending on the analytical criteria used to predict antigenic determinants, the exact address of the determinant may vary slightly.

[85] Column 8, in Table 1B, provides an expression profile and library code: count for each of the contig sequences (SEQ ID NO:X) disclosed in Table 1B, which can routinely be combined with the information provided in Table 4 and used to determine the tissues, cells, and/or cell line libraries which predominantly express the polynucleotides of the invention. The first number in column 8 (preceding the colon), represents the tissue/cell source identifier code corresponding to the code and description provided in Table 4. For those identifier codes in which the first two letters are not "AR", the second number in column 8 (following the colon) represents the number of times a sequence corresponding to the reference polynucleotide sequence was identified in the tissue/cell source. Those tissue/cell source identifier codes in which the first two letters are "AR" designate information generated using DNA array technology. Utilizing this technology, cDNAs were amplified by PCR and then transferred, in duplicate, onto the array. Gene expression was assayed through hybridization of first strand cDNA probes to the DNA array. cDNA probes were generated from total RNA extracted from a variety of different tissues and cell lines. Probe synthesis was performed in the presence of ^{33}P dCTP, using oligo(dT) to prime reverse transcription. After hybridization, high stringency washing conditions were employed to remove non-specific hybrids from the array. The remaining signal, emanating from each gene target, was measured using a Phosphorimager. Gene expression was reported as Phosphor Stimulating Luminescence (PSL) which reflects the level of phosphor signal generated from the probe hybridized to each of the gene targets represented on the array. A local background signal subtraction was performed before the total signal generated from each array was used to normalize gene expression between the different hybridizations. The value presented after "[array code]:" represents the mean of the duplicate values, following background subtraction and probe normalization. One of skill in the art could routinely use this information to identify normal and/or diseased tissue(s) which show a predominant expression pattern of the corresponding

Printed: 09.05.2002

polynucleotide of the invention or to identify polynucleotides which show predominant and/or specific tissue and/or cell expression.

[86] Column 9 in Table 1B provides a chromosomal map location for certain polynucleotides of the invention. Chromosomal location was determined by finding exact matches to EST and cDNA sequences contained in the NCBI (National Center for Biotechnology Information) UniGene database. Each sequence in the UniGene database is assigned to a "cluster"; all of the ESTs, cDNAs, and STSs in a cluster are believed to be derived from a single gene. Chromosomal mapping data is often available for one or more sequence(s) in a UniGene cluster; this data (if consistent) is then applied to the cluster as a whole. Thus, it is possible to infer the chromosomal location of a new polynucleotide sequence by determining its identity with a mapped UniGene cluster.

[87] A modified version of the computer program BLASTN (Altshul, et al., J. Mol. Biol. 215:403-410 (1990), and Gish, and States, Nat. Genet. 3:266-272) (1993) was used to search the UniGene database for EST or cDNA sequences that contain exact or near-exact matches to a polynucleotide sequence of the invention (the 'Query'). A sequence from the UniGene database (the 'Subject') was said to be an exact match if it contained a segment of 50 nucleotides in length such that 48 of those nucleotides were in the same order as found in the Query sequence. If all of the matches that met this criteria were in the same UniGene cluster, and mapping data was available for this cluster, it is indicated in Table 1B under the heading "Cytologic Band". Where a cluster had been further localized to a distinct cytologic band, that band is disclosed; where no banding information was available, but the gene had been localized to a single chromosome, the chromosome is disclosed.

[88] Once a presumptive chromosomal location was determined for a polynucleotide of the invention, an associated disease locus was identified by comparison with a database of diseases which have been experimentally associated with genetic loci. The database used was the Morbid Map, derived from OMIM™ ("Online Mendelian Inheritance in Man"; McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine (Bethesda, MD) 2000; World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). If the putative chromosomal location of a polynucleotide of the invention (Query sequence)

Proof - 30052004

was associated with a disease in the Morbid Map database, an OMIM reference identification number was noted in column 10, Table 1B, labelled "OMIM Disease Reference(s). Table 5 is a key to the OMIM reference identification numbers (column 1), and provides a description of the associated disease in Column 2.

[89] Table 1C summarizes additional polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID NO:Z), contig sequences (contig identifier (Contig ID:) contig nucleotide sequence identifiers (SEQ ID NO:X)), and genomic sequences (SEQ ID NO:B). The first column provides a unique clone identifier, "Clone ID NO:Z", for a cDNA clone related to each contig sequence. The second column provides the sequence identifier, "SEQ ID NO:X", for each contig sequence. The third column provides a unique contig identifier, "Contig ID:" for each contig sequence. The fourth column, provides a BAC identifier "BAC ID NO:A" for the BAC clone referenced in the corresponding row of the table. The fifth column provides the nucleotide sequence identifier, "SEQ ID NO:B" for a fragment of the BAC clone identified in column four of the corresponding row of the table. The sixth column, "Exon From-To", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:B which delineate certain polynucleotides of the invention that are also exemplary members of polynucleotide sequences that encode polypeptides of the invention (e.g., polypeptides containing amino acid sequences encoded by the polynucleotide sequences delineated in column six, and fragments and variants thereof).

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TABLE 1C

Clone ID	SEQ ID No:X	CONTIG ID	BAC ID: A	SEQ ID NO:B	EXON From-To
H6BSF56	11	762968	AC069362	1019	1-131
H6BSF56	11	762968	AC027584	1020	1-162
H6BSF56	11	762968	AC011101	1021	1-100
H6BSF56	11	762968	AC073446	1022	1-140
H6BSF56	11	762968	AC026556	1023	1-114
H6BSF56	11	762968	AL136171	1024	1-61
H6BSF56	11	762968	AC025975	1025	1-136
H6BSF56	11	762968	AC073219	1026	1-123
H6BSF56	11	762968	AL162741	1027	1-45
H6BSF56	11	762968	AC027584	1028	1-368
H6BSF56	11	762968	AC073446	1029	1-52 2626-2925
H6BSF56	11	762968	AL162741	1030	1-102
H6EEC72	13	889401	AC012314	1031	1-181 1281-1463 2719-2983 3158-3411 3804-6347 6745-6879 7118-7319 7420-7521 7859-8305 8552-8602 9988-10334 10415-10778 11003-11127 11210-11303 11334-11832 13093-13145 13703-13837 13918-14152 15415-15511 15613-15742 15998-16087 16231-16307 16447-17211 18520-18796 21777-22001
H6EEC72	13	889401	AC009968	1032	1-180 1275-1457 2712-2976 3150-3403 3796-6332 6730-6864 7103-7303 7404-7505 7843-8289 8536-8586 9970-10312 10393-10756 10981-11105 11188-11805 13068-13120

					13678-13812 13905-13994
H6EEC72	13	889401	AC012314	1033	1-43 861-1031 1576-1743 1924-2132 2203-2432 2473-2905 3177-3360 3651-4332 4422-4583 4830-4995 5086-5365
H6EEC72	13	889401	AC009968	1034	1-43 857-1027 1570-1737 1918-2126 2197-2426 2467-2899 3171-3354 3644-4326 4416-4577 4824-4989 5080-5360
HACAB68	14	584773	AL160283	1035	1-2811
HACAB68	14	584773	AL354793	1036	1-3734 3843-4723
HACAB68	14	584773	AL356058	1037	1-3055 3165-4045
HACBJ56	15	847112	AC069497	1038	1-117 2470-3367 4908-5262 5641-5756 7886-8200 9815-11138
HACBJ56	15	847112	AC007104	1039	1-802 2342-2695 3074-3189 5319-5633 7248-8571
HACBJ56	15	847112	AC069497	1040	1-453
HACBJ56	15	847112	AC007104	1041	1-453
HACBS22	16	847113	AC012073	1042	1-134 718-833 1002-1132 2357-2516 3762-3945 5344-5477 7446-7594 7742-7904 10636-10725 11138-12223 12583-12977 13095-13178 14224-14532 14668-14841 15779-16124 16257-16343 16508-16826 17489-17757

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HACBS22	16	847113	AC012073	1043	1-545
HADMB15	19	847116	AC026666	1044	1-385 406-780
HADMB15	19	847116	AC026281	1045	1-114 430-875 896-1262
HAGDW20	21	637489	AC006453	1046	1-1568
HAGDW20	21	637489	AC005629	1047	1-1569
HAGDW20	21	637489	AC010098	1048	1-1569
HAGDW20	21	637489	AC006453	1049	1-438
HAGDW20	21	637489	AC006453	1050	1-375
HAGDW20	21	637489	AC005629	1051	1-438
HAGDW20	21	637489	AC005629	1052	1-375
HAGFS57	24	847120	AC021238	1053	1-140 3343-3636 5052-5179 5712-5796 6486-6918 7867-8404 8934-9513 9711-10538 10984-11992 12080-12349 12485-12857 13895-14212 14994-15054 15169-15297 16132-16211 17721-17811 18135-18354 18363-18444 19661-19720 19841-20784 20920-21236 22168-24079
HAGFS57	24	847120	AC066613	1054	1-433 1382-1919 2449-3028 3226-4053 4499-5507 5595-5864 6000-6372 7410-7727 8509-8569 8684-8812 9647-9726 11236-11326 11650-11869 11878-11959 13176-13235 13356-14299 14435-14752

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HAJAY92	28	845601	AL353726	1055	1-2332
HAJAY92	28	845601	AL353726	1056	1-115
HAJAY92	28	845601	AL353726	1057	1-115
HAJCH70	30	827275	AL159987	1058	1-2168
HAQAI92	32	688037	AL118502	1059	1-471 571-1561
HAQAI92	32	688037	AL161939	1060	1-471 571-1561
HAQAI92	32	688037	AC004064	1061	1-471 571-1561
HAQAI92	32	688037	AL118502	1062	1-161
HAQAI92	32	688037	AL118502	1063	1-285
HAQAI92	32	688037	AL161939	1064	1-415
HAQAI92	32	688037	AL161939	1065	1-285
HAQAI92	32	688037	AC004064	1066	1-285
HAQAI92	32	688037	AC004064	1067	1-415
HATBI94	34	839468	AC016372	1068	1-1727
HATBI94	34	839468	AL390735	1069	1-1729
HATBI94	34	839468	AL138791	1070	1-1333
HATBI94	34	839468	AC016372	1071	1-646
HATBI94	34	839468	AC016372	1072	1-766
HATBI94	34	839468	AL390735	1073	1-646
HATBI94	34	839468	AL390735	1074	1-766
HATCB45	35	631172	AC009307	1075	1-1044
HATCB45	35	631172	AC006501	1076	1-1044
HATCB45	35	631172	AC009307	1077	1-318
HATCB45	35	631172	AC009307	1078	1-370
HATCB45	35	631172	AC006501	1079	1-318
HATCB45	35	631172	AC006501	1080	1-111
HATCD80	36	826098	AL158801	1081	1-1974
HATCD80	36	826098	AL158801	1082	1-90
HATCI03	37	580805	AL137119	1083	1-81 824-941 972-1185 2432-2705 3880-4812 4880-5011 5828-6591 8231-8398 8618-8767 9466-9728
HATCI03	37	580805	AL138688	1084	1-81 825-942 973-1186 2433-2706 3881-4795 4870-5001 5818-6581 8221-8388 8608-8757 9456-9718
HATCI03	37	580805	AL137119	1085	1-542
HATCI03	37	580805	AL138688	1086	1-542
HATEH20	38	836056	AC006207	1087	1-2845
HATEH20	38	836056	AC006207	1088	1-76 1150-1290 1699-2395
HBAGD86	39	838799	AC016755	1089	1-41

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					1648-1993 2035-3552 3554-6713
HBAGD86	39	838799	AC016755	1090	1-161 696-809 2256-2753 6910-6991 7733-7857 9267-9458 10650-10734 11114-11562 11678-11801 12524-12817 14494-15914
HBAGD86	39	838799	AC016755	1091	1-217
HBCJL35	40	1300785	AL158846	1092	1-4302 4512-4570 4837-5068 5373-5856 5965-6104 6899-7643 8898-9042 9567-9925
HBCJL35	40	1300785	AL158846	1093	1-170 406-723 864-2386
HBCJL35	40	1300785	AL158846	1094	1-46 101-334
HBGNC72	44	892131	AC016588	1095	1-67 319-423 3335-3462 3594-3680 4721-5143 5551-6677
HBHAA05	45	603174	AL353743	1096	1-677
HBHAA05	45	603174	AL161453	1097	1-677
HBHAA05	45	603174	AL161453	1098	1-339
HBHAA81	46	846465	AC006059	1099	1-230 1619-1699 1953-2090 2986-3054 3665-3786 3902-4406 4457-4674 5129-5531 5660-5811 5934-5969 7563-7959 8086-9195 9591-9735 9788-10149
HBHAA81	46	846465	AC018471	1100	1-230 1619-1699 1965-2090 2986-3054 3665-3786 3902-4405 4456-4673 5128-5530 5659-5810

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HBHAA81	46	846465	AC006059	1101	1-340 501-802
HBHAA81	46	846465	AC006059	1102	1-661 1538-1684 3489-3680 3832-3933 4241-4410 5782-5872 5998-6150
HBHAA81	46	846465	AC018471	1103	1-661 1539-1672
HBHAA81	46	846465	AC018471	1104	1-340 501-802
HBIAA59	47	806303	AL121929	1105	1-1114 1186-3742
HBIAA59	47	806303	AL121929	1106	1-226
HBIAA59	47	806303	AL121929	1107	1-243
HBJAB02	50	837309	AC015651	1108	1-35 159-252 410-783 786-830 953-1035 1452-1553 1651-2071 2161-2264 2352-2454 2494-2758 2847-3006 3135-3272 3477-4138 4907-5738 5972-6059 6132-6367 6650-6834 6915-7010 7091-7658 7662-9457 10122-10222 11415-11534 12386-12418 13253-13584 13635-13867 14881-15326 15851-16013 16529-16816 17430-17529 18140-18269 18634-18734 19189-19369 20434-21105 21912-22008
HBJAB02	50	837309	AC015651	1109	1-2097 5308-5495 5696-5742 5890-6249

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HBJDW56	55	520401	AC005532	1110	1-626
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HBJDW56	55	520401	AC005532	1112	1-176
HBMBM96	60	561935	AP000786	1113	1-1121
HBMBM96	60	561935	AP000786	1114	1-192
HBMBX01	61	705047	AC004236	1115	1-2981
HBMBX01	61	705047	AL354986	1116	1-2981
HBMBX01	61	705047	AC025145	1117	1-2981
HBMBX01	61	705047	AC004236	1118	1-537
HBMBX01	61	705047	AC004236	1119	1-334
HBMBX01	61	705047	AL354986	1120	1-334
HBMBX01	61	705047	AL354986	1121	1-537
HBMBX01	61	705047	AC025145	1122	1-537
HBMBX01	61	705047	AC025145	1123	1-328
HBMTM11	62	589515	AC005412	1124	1-5153
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HBMTM11	62	589515	AC005412	1126	1-401 2025-2517 3932-4032 4495-4619 5190-5319 6731-7210 7410-7747 7885-7989 10428-10528 12252-12623 14008-14169 15102-15535 15963-16112 17178-17644 20468-21126 21810-25012
HBMTM11	62	589515	AC005412	1127	1-134
HBMTM11	62	589515	AC068025	1128	1-134
HBMTM11	62	589515	AC068025	1129	1-3201
HBMWE61	66	778066	AL049732	1130	1-248 1363-1656 1738-2707 3831-3892 4148-4228 4752-4846 5021-5344

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HBMWE61	66	778066	AL049732	1131	1-829 3610-3658 3665-4981 12571-14809
HBNBJ76	68	810332	AC004453	1132	1-3544
HBNBJ76	68	810332	AC004453	1133	1-309
HBNBJ76	68	810332	AC004453	1134	1-468
HBSAK32	71	856387	AL161656	1135	1-325 363-460 507-980 1258-1440 1691-2081 2107-2347 2442-2595 2622-3125 3993-4605 4876-5153 5309-5877
HBSAK32	71	856387	AL161656	1136	1-186 511-636
HBXCM66	72	639039	AC011962	1137	1-102
HCDCY76	74	837972	AP001528	1138	1-3072
HCDCY76	74	837972	AP001528	1139	1-380
HCE1G78	76	761204	AC005005	1140	1-148 1171-1291 1870-3004 3641-3752 3952-4068 4387-4561 4980-5091 5243-5349 5497-5683 5962-6073 6855-7088 9649-9785 10127-10269 10438-10506 10631-10739 10938-11726
HCE1G78	76	761204	AC005005	1141	1-432
HCE2H52	77	847007	AC022833	1142	1-1271
HCE3B04	78	831151	AC021883	1143	1-2450
HCE3B04	78	831151	AC021883	1144	1-466
HCE5F78	79	838101	AC007318	1145	1-1782
HCE5F78	79	838101	AC007318	1146	1-98
HCEEE79	81	560609	AC006923	1147	1-1044
HCEEE79	81	560609	AC006923	1148	1-207
HCEEU18	83	688041	AC008469	1149	1-169
HCEEU18	83	688041	AC026400	1150	1-170
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HCEGX05	85	827060	AL133227	1155	1-32 712-1071 3453-3870 4197-4326 4639-4751 5131-5202 5588-5638 7454-8108 8670-8767 9511-9692 9754-10134 11109-11226 12456-12607 15237-15316 18143-18311 18429-18478 20682-20982 20988-21295 22686-23061 23358-23495 24076-24612 25196-25334 26760-26926 27041-27152 27271-27379 27697-28289 29024-29340 29761-29840 31168-32681
HCEGX05	85	827060	AL161661	1156	1-130 443-555 935-1006 1392-1442 3258-3912 4474-4571 5315-5496 5558-5938 6915-7032 8262-8413 11042-11121 13948-14116 14234-14283 16487-16787 16793-17100 18494-18869 19166-19303 19884-20420 21002-21140 22566-22732 22847-22958 23077-23185 23503-24095

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					24826-25142 25563-25642 26969-28482
HCEGX05	85	827060	AL133227	1157	1-51 476-521 842-1226 1375-1490 3745-4016 4046-4229 4430-4855 5300-6053 6598-6883 7406-7446 7461-8437 8550-8681 8888-8919 8943-9353 9458-9544 9834-10607 11550-11629 12196-12374 13532-14886
HCEGX05	85	827060	AL161661	1158	1-418
HCEGX05	85	827060	AL161661	1159	1-50 475-520 841-1225 3744-4014 4044-4227 4428-4853 4925-5089 5298-6051 6649-6801
HCFLN88	86	610000	AC005089	1160	1-594 1779-2065 2224-2411 3295-3588 3962-4463 5317-5561 5835-6210 6750-7793
HCFLN88	86	610000	AC005089	1161	1-141
HCFLN88	86	610000	AC005089	1162	1-215
HCMSX51	89	788643	U96629	1163	1-3014
HCMSX51	89	788643	AC040975	1164	1-3014
HCNCO11	90	775086	AC011319	1165	1-700
HCNCO11	90	775086	AC069204	1166	1-700
HCNCO11	90	775086	AC011319	1167	1-354
HCNCO11	90	775086	AC011319	1168	1-338
HCNCO11	90	775086	AC069204	1169	1-354
HCQBH72	92	637548	AC073530	1170	1-1790
HCQBH72	92	637548	AC073530	1171	1-106
HCQBH72	92	637548	AC073530	1172	1-410
HCQCM24	95	845070	AC024969	1173	1-3278
HCQCM24	95	845070	AC026833	1174	1-3270
HCQCM24	95	845070	AC024969	1175	1-339
HCQCM24	95	845070	AC026833	1176	1-339
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					1138-1283 2101-2241 3646-3723 4316-4418 5123-5221 5531-5609 6090-6192 6447-6790
HCRBF72	97	828945	AL031731	1178	1-742 941-1493 1926-2063 2330-2427 2939-3397 3456-3806 4127-4407 5411-5701 5758-5887 6247-6369 6418-6967 8694-8799 8827-8931 8973-9140 10098-10228 11027-11789 12063-13656 14974-15080 15481-15672 15724-15921 16055-16089 17154-17467 17730-17886 18256-18550 18657-18902
HCUCF89	100	637986	AC022554	1179	1-1066
HCUCF89	100	637986	AC022554	1180	1-692
HCUCF89	100	637986	AC022554	1181	1-643
HCUCK44	101	790277	AC007842	1182	1-1118
HCUCK44	101	790277	AC007842	1183	1-415
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HCWAE64	103	535893	AL157935	1185	1-1319 2024-2316 2937-2984 3126-3281 5595-5703 5788-6574 6667-6733 6788-6880 6962-7303 8111-11869 12019-12418 12420-12679 13140-13191
HCWAE64	103	535893	AL157935	1186	1-1316
HCWAE64	103	535893	AL157935	1187	1-309
HCWFU39	104	651316	AP000427	1188	1-2086 2209-2777 3392-4040 5819-5959
HCWUL09	105	834722	AL138741	1189	1-755
HCWUL09	105	834722	AL138741	1190	1-555

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HDHAA42	106	695710	AC069193	1191	1-1213
HDHAA42	106	695710	AL049629	1192	1-1213
HDHAA42	106	695710	AC069193	1193	1-807
HDHAA42	106	695710	AL049629	1194	1-807
HDHAA42	106	695710	AL049629	1195	1-129
HDPDI72	109	897277	AL139238	1196	1-76 3170-3542 4724-5613 6598-6719 6954-7373 8256-8349 10408-11003
HDPDI72	109	897277	AL139238	1197	1-279
HDPFF10	111	853513	AC023797	1198	1-120 135-715 1005-1364 1715-2180 2566-2672 3355-3621 3641-4033 4196-4285 5100-7482
HDPFF10	111	853513	AC023797	1199	1-463
HDPFY18	113	779450	AC011875	1200	1-1880
HDPFY18	113	779450	AP000848	1201	1-1470
HDPFY18	113	779450	AP000663	1202	1-3332
HDPOO76	118	838594	AC006483	1203	1-109 132-434 604-3482
HDPOO76	118	838594	AC026717	1204	1-1820
HDPOO76	118	838594	AC035147	1205	1-1820
HDPOO76	118	838594	AC026692	1206	1-1823
HDPOO76	118	838594	AC073481	1207	1-2558
HDPOO76	118	838594	AC006483	1208	1-216
HDPOO76	118	838594	AC006483	1209	1-231
HDPOO76	118	838594	AC073481	1210	1-231
HDPPQ30	120	684292	AL022315	1211	1-968
HDPPQ30	120	684292	AL022315	1212	1-255
HDPXN20	122	801896	AP001810	1213	1-4481
HDPXN20	122	801896	AP001649	1214	1-4481
HDPXN20	122	801896	AC021331	1215	1-4481
HDPXN20	122	801896	AP001810	1216	1-363
HDPXN20	122	801896	AP001649	1217	1-363
HDPXN20	122	801896	AC021331	1218	1-363
HDTAV54	125	801898	AC073342	1219	1-164 208-280 349-1975 1978-2434 2614-2946 4135-9074 9200-9507
HDTAV54	125	801898	AC073342	1220	1-434
HDTFX18	126	801957	AC013303	1221	1-832 1218-1410 2344-2463 3663-3955 4307-4617 5925-6011 10329-10419

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HWDAJ01	507	794016	AC015551	2150	1-670
HWDAJ01	507	794016	AC019214	2151	1-670
HWHPB78	508	740778	AL157945	2152	1-300 364-790 1344-1519 1584-1709 2403-2580 4780-4968 5485-5559 5960-6128 6243-6955 7258-7317 9073-9145 9404-9544 10342-10513 10746-11354 12004-12578 12863-13087 13224-13382 13993-14047 14319-14444 14753-14878 15465-15713 16007-16123 17413-17740 17817-18127 18231-18634 18771-18881 19945-20231 21024-21169 23112-23363 23692-24413
HWHPB78	508	740778	AC026283	2153	1-292 353-776 1340-1506 1568-1696 2408-2534 4767-4955 5472-5546 5957-6293 6373-7085 7386-7445 9201-9273 9532-9672 10470-10641 10873-11481 12131-12705 12990-13214

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					13351-13509 14119-14173 14445-14570 14879-15004 15604-15844 16133-16253 17540-17867 17944-18254 18356-18755 18892-19002 20066-20352 21146-21308 23235-23486 23813-24533
HWHPB78	508	740778	AL157945	2154	1-490
HWHPB78	508	740778	AC026283	2155	1-318
HYABC84	509	789854	AL132825	2156	1-2512 2604-2740 2974-3241
HYABC84	509	789854	AL132825	2157	1-553 1059-1263 3121-3476 5284-5734 6284-6513 6786-7426 8674-8733 10656-10933 11453-11555 12991-13079 13839-14281 14527-14827 15156-15685 15835-16046 16166-16604 16736-19566 19658-19794 20028-20295
HYABC84	509	789854	AL132825	2158	1-188
HYABC84	510	865064	AL132825	2159	1-2512 2604-2740 2974-3241
HYABC84	510	865064	AL132825	2160	1-553 1059-1263 3121-3476 5284-5734 6284-6513 6786-7426 8674-8733 10656-10933 11453-11555 12991-13079 13839-14281 14527-14827 15156-15685 15835-16046 16166-16604 16736-19566 19658-19794 20028-20295
HYABC84	510	865064	AL132825	2161	1-188

[90] **Tables 1D and 1E:** The polynucleotides or polypeptides, or agonists or antagonists of the present invention can be used in assays to test for one or more biological activities. If these polynucleotides and polypeptides do exhibit activity in a particular assay, it is likely that these molecules may be involved in the diseases associated with the biological activity. Thus, the polynucleotides or polypeptides, or agonists or antagonists could be used to treat the associated disease.

[91] The present invention encompasses methods of preventing, treating, diagnosing, or ameliorating a disease or disorder. In preferred embodiments, the present invention encompasses a method of treating a disease or disorder listed in the "Preferred Indications" columns of Table 1D and Table 1E; comprising administering to a patient in which such treatment, prevention, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to treat, prevent, diagnose, or ameliorate the disease or disorder. The first and seccond columns of Table 1D show the "Gene No." and "cDNA Clone ID No.", respectively, indicating certain nucleic acids and proteins (or antibodies against the same) of the invention (including polynucleotide, polypeptide, and antibody fragments or variants thereof) that may be used in preventing, treating, diagnosing, or ameliorating the disease(s) or disorder(s) indicated in the corresponding row in Column 3 of Table 1D.

[92] In another embodiment, the present invention also encompasses methods of preventing, treating, diagnosing, or ameliorating a disease or disorder listed in the "Preferred Indications" column of Table 1D and Table 1E; comprising administering to a patient combinations of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in Column 3 of Table 1D.

[93] The "Preferred Indications" columns of Table 1D and Table 1E describe diseases, disorders, and/or conditions that may be treated, prevented, diagnosed, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

[94] The recitation of "Cancer" in the "Preferred Indications" columns indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof) may be used for example, to diagnose, treat, prevent, and/or

ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., leukemias, cancers, and/or as described below under "Hyperproliferative Disorders").

[95] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D may be used for example, to diagnose, treat, prevent, and/or ameliorate a neoplasm located in a tissue selected from the group consisting of: colon, abdomen, bone, breast, digestive system, liver, pancreas, prostate, peritoneum, lung, blood (e.g., leukemia), endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), uterus, eye, head and neck, nervous (central and peripheral), lymphatic system, pelvic, skin, soft tissue, spleen, thoracic, and urogenital.

[96] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a pre-neoplastic condition, selected from the group consisting of: hyperplasia (e.g., endometrial hyperplasia and/or as described in the section entitled "Hyperproliferative Disorders"), metaplasia (e.g., connective tissue metaplasia, atypical metaplasia, and/or as described in the section entitled "Hyperproliferative Disorders"), and/or dysplasia (e.g., cervical dysplasia, and bronchopulmonary dysplasia).

[97] In another specific embodiment, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cancer" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a benign dysproliferative disorder selected from the group consisting of: benign tumors, fibrocystic conditions, tissue hypertrophy, and/or as described in the section entitled "Hyperproliferative Disorders".

[98] The recitation of "Immune/Hematopoietic" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

[99] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having the "Immune/Hematopoietic" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat,

prevent, and/or ameliorate a disease or disorder selected from the group consisting of: anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, asthma, AIDS, autoimmune disease, rheumatoid arthritis, granulomatous disease, immune deficiency, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, systemic lupus erythematosis, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and allergies.

[100] The recitation of "Reproductive" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the reproductive system (e.g., as described below under "Reproductive System Disorders").

[101] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Reproductive" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cryptorchism, prostatitis, inguinal hernia, varicocele, leydig cell tumors, verrucous carcinoma, prostatitis, malacoplakia, Peyronie's disease, penile carcinoma, squamous cell hyperplasia, dysmenorrhea, ovarian adenocarcinoma, Turner's syndrome, mucopurulent cervicitis, Sertoli-leydig tumors, ovarian cancer, uterine cancer, pelvic inflammatory disease, testicular cancer, prostate cancer, Klinefelter's syndrome, Young's syndrome, premature ejaculation, diabetes mellitus, cystic fibrosis, Kartagener's syndrome, testicular atrophy, testicular feminization, anorchia, ectopic testis, epididymitis, orchitis, gonorrhea, syphilis, testicular torsion, vasitis nodosa, germ cell tumors, stromal tumors, dysmenorrhea, retroverted uterus, endometriosis, fibroids, adenomyosis, anovulatory bleeding, amenorrhea, Cushing's syndrome, hydatidiform moles, Asherman's syndrome, premature menopause, precocious puberty, uterine polyps, dysfunctional uterine bleeding, cervicitis, chronic cervicitis, mucopurulent cervicitis, cervical dysplasia, cervical polyps, Nabothian cysts, cervical erosion, cervical incompetence, cervical neoplasms, pseudohermaphroditism, and premenstrual syndrome.

[102] The recitation of "Musculoskeletal" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the

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invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the immune system (e.g., as described below under "Immune Activity").

[103] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Musculoskeletal" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bone cancers (e.g., osteochondromas, benign chondromas, chondroblastoma, chondromyxoid fibromas, osteoid osteomas, giant cell tumors, multiple myeloma, osteosarcomas), Paget's Disease, rheumatoid arthritis, systemic lupus erythematosus, osteomyelitis, Lyme Disease, gout, bursitis, tendonitis, osteoporosis, osteoarthritis, muscular dystrophy, mitochondrial myopathy, cachexia, and multiple sclerosis.

[104] The recitation of "Cardiovascular" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders").

[105] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Cardiovascular" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: myxomas, fibromas, rhabdomyomas, cardiovascular abnormalities (e.g., congenital heart defects, cerebral arteriovenous malformations, septal defects), heart disease (e.g., heart failure, congestive heart disease, arrhythmia, tachycardia, fibrillation, pericardial Disease, endocarditis), cardiac arrest, heart valve disease (e.g., stenosis, regurgitation, prolapse), vascular disease (e.g., hypertension, coronary artery disease, angina, aneurysm, arteriosclerosis, peripheral vascular disease), hyponatremia, hypernatremia, hypokalemia, and hyperkalemia.

[106] The recitation of "Mixed Fetal" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent,

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and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders").

[107] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Mixed Fetal" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: spina bifida, hydranencephaly, neurofibromatosis, fetal alcohol syndrome, diabetes mellitus, PKU, Down's syndrome, Patau syndrome, Edwards syndrome, Turner syndrome, Apert syndrome, Carpenter syndrome, Conradi syndrome, Crouzon syndrome, cutis laxa, Cornelia de Lange syndrome, Ellis-van Creveld syndrome, Holt-Oram syndrome, Kartagener syndrome, Meckel-Gruber syndrome, Noonan syndrome, Pallister-Hall syndrome, Rubinstein-Taybi syndrome, Scimitar syndrome, Smith-Lemli-Opitz syndrome, thromocytopenia-absent radius (TAR) syndrome, Treacher Collins syndrome, Williams syndrome, Hirschsprung's disease, Meckel's diverticulum, polycystic kidney disease, Turner's syndrome, and gonadal dysgenesis, Klippel-Feil syndrome, Ostogenesis imperfecta, muscular dystrophy, Tay-Sachs disease, Wilm's tumor, neuroblastoma, and retinoblastoma.

[108] The recitation of "Excretory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and renal disorders (e.g., as described below under "Renal Disorders").

[109] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Excretory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bladder cancer, prostate cancer, benign prostatic hyperplasia, bladder disorders (e.g., urinary incontinence, urinary retention, urinary obstruction, urinary tract Infections, interstitial cystitis, prostatitis, neurogenic bladder, hematuria), renal disorders (e.g., hydronephrosis, proteinuria, renal failure, pyelonephritis, urolithiasis, reflux nephropathy, and unilateral obstructive uropathy).

[110] The recitation of "Neural/Sensory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the

invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the nervous system (e.g., as described below under "Neural Activity and Neurological Diseases").

[111] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Neural/Sensory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: brain cancer (e.g., brain stem glioma, brain tumors, central nervous system (Primary) lymphoma, central nervous system lymphoma, cerebellar astrocytoma, and cerebral astrocytoma, neurodegenerative disorders (e.g., Alzheimer's Disease, Creutzfeldt-Jakob Disease, Parkinson's Disease, and Idiopathic Presenile Dementia), encephalomyelitis, cerebral malaria, meningitis, metabolic brain diseases (e.g., phenylketonuria and pyruvate carboxylase deficiency), cerebellar ataxia, ataxia telangiectasia, and AIDS Dementia Complex, schizophrenia, attention deficit disorder, hyperactive attention deficit disorder, autism, and obsessive compulsive disorders.

[112] The recitation of "Respiratory" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders").

[113] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Respiratory" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of the respiratory system such as larynx cancer, pharynx cancer, trachea cancer, epiglottis cancer, lung cancer, squamous cell carcinomas, small cell (oat cell) carcinomas, large cell carcinomas, and adenocarcinomas. Allergic reactions, cystic fibrosis, sarcoidosis, histiocytosis X, infiltrative lung diseases (e.g., pulmonary fibrosis and lymphoid interstitial pneumonia), obstructive airway diseases (e.g., asthma, emphysema, chronic or acute bronchitis), occupational lung diseases (e.g., silicosis and asbestosis), pneumonia, and pleurisy.

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[114] The recitation of "Endocrine" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders"), renal disorders (e.g., as described below under "Renal Disorders"), and disorders of the endocrine system (e.g., as described below under "Endocrine Disorders".

[115] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having an "Endocrine" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of endocrine tissues and organs (e.g., cancers of the hypothalamus, pituitary gland, thyroid gland, parathyroid glands, pancreas, adrenal glands, ovaries, and testes), diabetes (e.g., diabetes insipidus, type I and type II diabetes mellitus), obesity, disorders related to pituitary glands (e.g., hyperpituitarism, hypopituitarism, and pituitary dwarfism), hypothyroidism, hyperthyroidism, goiter, reproductive disorders (e.g. male and female infertility), disorders related to adrenal glands (e.g., Addison's Disease, corticosteroid deficiency, and Cushing's Syndrome), kidney cancer (e.g., hypernephroma, transitional cell cancer, and Wilm's tumor), diabetic nephropathy, interstitial nephritis, polycystic kidney disease, glomerulonephritis (e.g., IgM mesangial proliferative glomerulonephritis and glomerulonephritis caused by autoimmune disorders; such as Goodpasture's syndrome), and nephrocalcinosis.

[116] The recitation of "Digestive" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the gastrointestinal system (e.g., as described below under "Gastrointestinal Disorders".

[117] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Digestive" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: ulcerative colitis, appendicitis, Crohn's disease, hepatitis, hepatic encephalopathy, portal hypertension,

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cholelithiasis, cancer of the digestive system (e.g., biliary tract cancer, stomach cancer, colon cancer, gastric cancer, pancreatic cancer, cancer of the bile duct, tumors of the colon (e.g., polyps or cancers), and cirrhosis), pancreatitis, ulcerative disease, pyloric stenosis, gastroenteritis, gastritis, gastric atropy, benign tumors of the duodenum, distension, irritable bowel syndrome, malabsorption, congenital disorders of the small intestine, bacterial and parasitic infection, megacolon, Hirschsprung's disease, aganglionic megacolon, acquired megacolon, colitis, anorectal disorders (e.g., anal fistulas, hemorrhoids), congenital disorders of the liver (e.g., Wilson's disease, hemochromatosis, cystic fibrosis, biliary atresia, and alpha1-antitrypsin deficiency), portal hypertension, cholelithiasis, and jaundice.

[118] The recitation of "Connective/Epithelial" in the "Preferred Indication" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level "), angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity "), and or to promote or inhibit regeneration (e.g., as described below under "Regeneration "), and wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

[119] In specific embodiments, a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) having a "Connective/Epithelial" recitation in the "Preferred Indication" column of Table 1D, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: connective tissue metaplasia, mixed connective tissue disease, focal epithelial hyperplasia, epithelial metaplasia, mucoepithelial dysplasia, graft v. host disease, polymyositis, cystic hyperplasia, cerebral dysplasia, tissue hypertrophy, Alzheimer's disease, lymphoproliferative disorder, Waldenstron's macroglobulinemia, Crohn's disease, pernicious anemia, idiopathic Addison's disease, glomerulonephritis, bullous pemphigoid, Sjogren's syndrome, diabetes mellitus, cystic fibrosis, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, osteoporosis, osteocarthritis, periodontal disease, wound healing, relapsing polychondritis, vasculitis, polyarteritis nodosa, Wegener's granulomatosis, cellulitis, rheumatoid arthritis, psoriatic arthritis, discoid lupus erythematosus, systemic lupus erythematosus, scleroderma, CREST syndrome, Sjogren's syndrome, polymyositis, dermatomyositis, mixed connective tissue disease, relapsing

polychondritis, vasculitis, Henoch-Schonlein syndrome, erythema nodosum, polyarteritis nodosa, temporal (giant cell) arteritis, Takayasu's arteritis, Wegener's granulomatosis, Reiter's syndrome, Behcet's syndrome, ankylosing spondylitis, cellulitis, keloids, Ehler Danlos syndrome, Marfan syndrome, pseudoxantoma elasticum, osteogenese imperfecta, chondrodysplasias, epidermolysis bullosa, Alport syndrome, and cutis laxa.

TABLE 1D

Gene No.	Clone ID	Preferred Indications
1	H6BSF56	Cancer
2	H6EDM64	Cancer
3	H6EEC72	Cancer
4	HACAB68	Connective/Epithelial, Immune/Hematopoetic
5	HACBJ56	Cancer
6	HACBS22	Cancer
7	HADDE71	Cancer
8	HADDJ13	Connective/Epithelial
9	HADMB15	Cancer
10	HAGBQ12	Excretory, Neural/Sensory
11	HAGDW20	Neural/Sensory, Reproductive
12	HAGEG10	Cancer
13	HAGEQ79	Cancer
14	HAGFS57	Cancer
15	HAGHN57	Cancer
16	HAHEA15	Cardiovascular
17	HAJAA47	Immune/Hematopoetic
18	HAJAY92	Cancer
19	HAJBV67	Cancer
20	HAJCH70	Cancer
21	HAOAG15	Cancer
22	HAQAI92	Digestive, Mixed Fetal, Reproductive
23	HAQCE11	Reproductive
24	HATBI94	Cancer
25	HATCB45	Endocrine, Immune/Hematopoetic
26	HATCD80	Endocrine, Reproductive
27	HATCI03	Endocrine, Immune/Hematopoetic, Neural/Sensory
28	HATEH20	Cancer
29	HBAGD86	Cancer
30	HBCJL35	Cancer
31	HBDAB91	Digestive, Immune/Hematopoetic
32	HBDAB91	Digestive,

		Immune/Hematopoetic
33	HBGBC29	Cancer
34	HBGNC72	Cancer
35	HBHAA05	Neural/Sensory
36	HBHAA81	Cardiovascular, Neural/Sensory
37	HBIAA59	Cancer
38	HBIAC29	Cancer
39	HBICW51	Digestive, Immune/Hematopoetic, Neural/Sensory
40	HBJAB02	Cancer
41	HBJAC65	Cancer
42	HBJBM12	Immune/Hematopoetic
43	HBJCR46	Cancer
44	HBJDS79	Cancer
45	HBJDW56	Immune/Hematopoetic
46	HBJEL16	Cancer
47	HBJFK45	Immune/Hematopoetic
48	HBJIG20	Cancer
49	HBJKD16	Cancer
50	HBMBM96	Cancer
51	HBMBX01	Cancer
52	HBMTM11	Cancer
53	HBMTX26	Immune/Hematopoetic
54	HBMTY48	Immune/Hematopoetic, Reproductive
55	HBMUH74	Cardiovascular, Immune/Hematopoetic, Reproductive
56	HBMWE61	Immune/Hematopoetic
57	HBNAX40	Cancer
58	HBNBJ76	Cancer
59	HBQAB79	Neural/Sensory
60	HBQAC57	Neural/Sensory
61	HBSAK32	Cancer
62	HBXCM66	Cardiovascular, Neural/Sensory, Reproductive
63	HBXCX15	Immune/Hematopoetic, Neural/Sensory
64	HCDCY76	Cancer
65	HCDDL48	Musculoskeletal
66	HCE1G78	Cancer
67	HCE2H52	Immune/Hematopoetic, Neural/Sensory, Reproductive
68	HCE3B04	Cancer
69	HCE5F78	Immune/Hematopoetic, Neural/Sensory
70	HCEDR26	Digestive, Immune/Hematopoetic, Neural/Sensory
71	HCEEE79	Neural/Sensory
72	HCEEQ25	Mixed Fetal, Neural/Sensory
73	HCEEU18	Cancer

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74	HCEFZ82	Cancer
75	HCEGX05	Cancer
76	HCFLN88	Cancer
77	HCFLT90	Cancer
78	HCHAB84	Cancer
79	HCMSX51	Cancer
80	HCNCO11	Digestive
81	HCNSD29	Cardiovascular, Digestive, Immune/Hematopoetic
82	HCQBH72	Digestive, Excretory, Immune/Hematopoetic
83	HCQCC96	Cancer
84	HCQCJ56	Cancer
85	HCQCM24	Cancer
86	HCRAY10	Cancer
87	HCRBF72	Cancer
88	HCRNF78	Cancer
89	HCUAF85	Immune/Hematopoetic
90	HCUCF89	Immune/Hematopoetic
91	HCUCK44	Cancer
92	HCUDD64	Cancer
93	HCWAE64	Immune/Hematopoetic
94	HCWFU39	Endocrine, Immune/Hematopoetic, Neural/Sensory
95	HCWUL09	Immune/Hematopoetic, Neural/Sensory
96	HDHAA42	Cancer
97	HDHEB76	Cancer
98	HDPCW16	Cancer
99	HDPDI72	Digestive, Immune/Hematopoetic
100	HDPDJ58	Cancer
101	HDPFF10	Cancer
102	HDPFU43	Cancer
103	HDPFY18	Cancer
104	HDPGE24	Cancer
105	HDPIU94	Cancer
106	HDPOC24	Cancer
107	HDPOL37	Immune/Hematopoetic, Reproductive
108	HDPOO76	Cancer
109	HDPPD93	Cancer
110	HDPPQ30	Immune/Hematopoetic
111	HDPPW82	Immune/Hematopoetic
112	HDPXN20	Immune/Hematopoetic
113	HDQHM36	Immune/Hematopoetic
114	HDTAU35	Immune/Hematopoetic
115	HDTAV54	Cancer
116	HDTFX18	Immune/Hematopoetic, Reproductive
117	HDTGW48	Immune/Hematopoetic, Reproductive
118	HDTLM18	Immune/Hematopoetic
119	HE2CA60	Cancer

120	HE2CA60	Cancer
121	HE2CH58	Digestive, Mixed Fetal
122	HE2CM39	Cancer
123	HE2HC60	Cancer
124	HE2PO93	Cancer
125	HE6AU52	Mixed Fetal
126	HE6CS65	Cancer
127	HE6DO92	Immune/Hematopoetic, Mixed Fetal
128	HE6EY13	Cancer
129	HE6FU11	Mixed Fetal, Neural/Sensory, Respiratory
130	HE6FV29	Cancer
131	HE8FC45	Cancer
132	HE8FC45	Cancer
133	HE8FD92	Cancer
134	HE8FD92	Cancer
135	HE8FD92	Cancer
136	HE8FD92	Cancer
137	HE8FD92	Cancer
138	HE8SG96	Mixed Fetal, Musculoskeletal
139	HE8TY46	Cancer
140	HE9CY05	Mixed Fetal
141	HE9EA10	Cancer
142	HE9GG20	Cancer
143	HEBCI18	Cancer
144	HEBCY54	Cancer
145	HEBDF77	Neural/Sensory
146	HEBDQ91	Neural/Sensory
147	HEBFR46	Cancer
148	HEBGE07	Neural/Sensory
149	HEGAU15	Excretory, Immune/Hematopoetic, Reproductive
150	HELAT35	Cardiovascular, Mixed Fetal
151	HELBU54	Cardiovascular
152	HELGG84	Cancer
153	HELGG84	Cancer
154	HEMEY47	Cardiovascular
155	HEOMC46	Immune/Hematopoetic
156	HEPBA14	Reproductive
157	HEQAH80	Cancer
158	HEQBF89	Reproductive
159	HETCI16	Cancer
160	HETDW58	Cancer
161	HETEY67	Connective/Epithelial, Reproductive
162	HFCDW95	Cancer
163	HFCEI04	Neural/Sensory
164	HFCFD04	Cancer
165	HFCFE20	Cancer
166	HFEAY59	Connective/Epithelial
167	HFGAJ16	Cancer

168	HFIHZ75	Cancer
169	HFIJA29	Cancer
170	HFIJA68	Cancer
171	HFKES05	Cancer
172	HFKEU12	Excretory
173	HFPCZ55	Cancer
174	HFPDR62	Immune/Hematopoetic, Neural/Sensory
175	HFPDS07	Cancer
176	HFRAB10	Excretory, Immune/Hematopoetic, Neural/Sensory
177	HFTBM38	Cancer
178	HFTDH56	Cancer
179	HFVGK35	Cancer
180	HFVHW43	Digestive
181	HFXAV37	Immune/Hematopoetic, Neural/Sensory
182	HFXBN86	Neural/Sensory
183	HFXBT66	Neural/Sensory
184	HFXFZ46	Neural/Sensory
185	HGBER72	Cancer
186	HGBEY14	Cancer
187	HGBGN34	Connective/Epithelial, Digestive, Reproductive
188	HGBHP91	Digestive
189	HGCAC19	Cancer
190	HGCAC19	Cancer
191	HGCAC19	Cancer
192	HHEAK45	Cancer
193	HHEGS55	Immune/Hematopoetic
194	HHEOW19	Cancer
195	HHFFF87	Cancer
196	HHFFL34	Cancer
197	HHFFS40	Cancer
198	HHGCS78	Immune/Hematopoetic
199	HHGDT26	Immune/Hematopoetic, Reproductive
200	HHPFU28	Cancer
201	HHPSA85	Cancer
202	HHSBI06	Cancer
203	HHSBI65	Cancer
204	HHSDI53	Cancer
205	HHSFC09	Cancer
206	HHSGL28	Cancer
207	HILCA24	Digestive, Immune/Hematopoetic, Reproductive
208	HILCA24	Digestive, Immune/Hematopoetic, Reproductive
209	HISAT67	Cancer
210	HJBCU75	Cancer
211	HJMAA03	Cancer
212	HJMAV41	Cancer
213	HJMAY90	Cancer

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214	HJPBE39	Cancer
215	HJPBK28	Cancer
216	HJPCH08	Cancer
217	HKABU43	Cancer
218	HKACI79	Cancer
219	HKAFF50	Cancer
220	HKGBF25	Cancer
221	HKIXC44	Cancer
222	HKMLK03	Digestive, Excretory, Immune/Hematopoetic
223	HKMLM95	Cancer
224	HKTAB41	Digestive, Excretory
225	HLDBG17	Cancer
226	HLDCA54	Cancer
227	HLDQU79	Cancer
228	HLDRT09	Cancer
229	HLHAP05	Immune/Hematopoetic, Neural/Sensory, Respiratory
230	HLHCS23	Respiratory
231	HLIBO72	Digestive
232	HLICE88	Digestive, Mixed Fetal
233	HLICO10	Cancer
234	HLJBS28	Cancer
235	HLMBW89	Cancer
236	HLMGP50	Digestive, Immune/Hematopoetic
237	HLMJB64	Cancer
238	HLMMX62	Immune/Hematopoetic, Neural/Sensory, Reproductive
239	HLQAS12	Cancer
240	HLQCL64	Cancer
241	HLQCX36	Digestive
242	HLWAF06	Digestive, Immune/Hematopoetic, Reproductive
243	HLWAU42	Cancer
244	HLWAU42	Cancer
245	HLWAV47	Cancer
246	HLWBB73	Cancer
247	HLWCN37	Cancer
248	HLWDB73	Cancer
249	HLYDF73	Immune/Hematopoetic
250	HLYEU59	Immune/Hematopoetic
251	HLYGB19	Cancer
252	HLYGE16	Cancer
253	HLYGY91	Cancer
254	HMCAZ04	Cancer
255	HMCAZ04	Cancer
256	HMCAZ04	Cancer
257	HMCAZ04	Cancer
258	HMCAZ04	Cancer
259	HMCFH60	Cancer

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260	HMDAB29	Digestive, Neural/Sensory
261	HMDAD44	Connective/Epithelial, Immune/Hematopoetic, Neural/Sensory
262	HMEBB82	Cancer
263	HMEDE24	Cancer
264	HMEDI90	Cancer
265	HMELM75	Cancer
266	HMIAK10	Neural/Sensory
267	HMIBF07	Neural/Sensory
268	HMICI80	Cardiovascular, Endocrine, Neural/Sensory
269	HMICP65	Cancer
270	HMJAK70	Neural/Sensory
271	HMSBE04	Immune/Hematopoetic
272	HMSCL38	Digestive, Immune/Hematopoetic, Neural/Sensory
273	HMSCR69	Cancer
274	HMSHC86	Immune/Hematopoetic
275	HMSHU20	Immune/Hematopoetic, Reproductive
276	HMSHY25	Immune/Hematopoetic
277	HMTAB77	Cancer
278	HMUAE26	Cancer
279	HMUAN45	Cancer
280	HMVBC31	Cancer
281	HMVDU15	Cancer
282	HMWBL03	Cancer
283	HMWJF53	Cancer
284	HNEAK81	Immune/Hematopoetic
285	HNECL22	Cancer
286	HNECW49	Immune/Hematopoetic
287	HNEDH88	Immune/Hematopoetic
288	HNFAC50	Cancer
289	HNFGR08	Immune/Hematopoetic
290	HNFHF34	Cancer
291	HNGAK51	Immune/Hematopoetic
292	HNGAM58	Immune/Hematopoetic
293	HNGBH53	Immune/Hematopoetic
294	HNGDQ38	Immune/Hematopoetic
295	HNGDX18	Cancer
296	HNGDY34	Immune/Hematopoetic
297	HNGEA34	Digestive, Immune/Hematopoetic
298	HNGEQ75	Immune/Hematopoetic, Neural/Sensory
299	HNGGA68	Immune/Hematopoetic, Musculoskeletal
300	HNGGP65	Immune/Hematopoetic
301	HNGHZ69	Immune/Hematopoetic
302	HNGIV64	Immune/Hematopoetic
303	HNGJB41	Immune/Hematopoetic
304	HNGKT41	Immune/Hematopoetic
305	HNGMW45	Immune/Hematopoetic

306	HNGNK44	Immune/Hematopoetic
307	HNGNO53	Immune/Hematopoetic
308	HNGPJ25	Immune/Hematopoetic, Mixed Fetal, Musculoskeletal
309	HNHEN82	Immune/Hematopoetic
310	HNHFE71	Immune/Hematopoetic
311	HNHGK22	Immune/Hematopoetic
312	HNHHB10	Immune/Hematopoetic, Reproductive
313	HNHKS19	Immune/Hematopoetic, Reproductive
314	HNTBT17	Cancer
315	HNTMH79	Cancer
316	HOABP31	Cancer
317	HOABP31	Cancer
318	HOACG07	Cancer
319	HODAG07	Reproductive
320	HODBB70	Reproductive
321	HODBV05	Cancer
322	HODCZ32	Reproductive
323	HOEBK60	Cancer
324	HOFAA78	Reproductive
325	HOFNB74	Reproductive
326	HOFNU55	Reproductive
327	HOGBF01	Reproductive
328	HORBS82	Cancer
329	HORBV76	Cardiovascular, Immune/Hematopoetic, Reproductive
330	HOSDO75	Cancer
331	HOSEC25	Immune/Hematopoetic, Musculoskeletal, Reproductive
332	HOSEI81	Digestive, Musculoskeletal
333	HOSEJ94	Cancer
334	HOUCA21	Connective/Epithelial, Immune/Hematopoetic, Musculoskeletal
335	HOUDE92	Cancer
336	HOUDR07	Cancer
337	HOUED72	Connective/Epithelial
338	HOUFS04	Cancer
339	HOUHI25	Cancer
340	HOVBD85	Musculoskeletal, Reproductive
341	HPCAB41	Immune/Hematopoetic, Reproductive
342	HPCAL26	Cancer
343	HPEAD23	Cancer
344	HPFBA54	Reproductive
345	HPFCI36	Cancer
346	HPFDI37	Cancer
347	HPIAA80	Cancer
348	HPJBJ51	Cancer
349	HPJBJ51	Cancer

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350	HPJBU43	Reproductive
351	HPJCW58	Reproductive
352	HPMBX22	Cancer
353	HPMCJ84	Reproductive
354	HPMCV30	Cancer
355	HPMFH77	Cancer
356	HPQAX38	Cardiovascular
357	HPQAX38	Cardiovascular
358	HPQCB83	Cancer
359	HPQCC53	Cancer
360	HPRBH85	Cancer
361	HPRCA64	Cancer
362	HPRCD35	Cancer
363	HPTRM02	Cancer
364	HPWBA29	Reproductive
365	HPWDK06	Cancer
366	HRAAD30	Cancer
367	HRADA42	Cancer
368	HRADF49	Cancer
369	HRADN25	Cancer
370	HRADT25	Digestive, Excretory
371	HRDAI17	Cancer
372	HRDDQ39	Cancer
373	HRDER22	Cancer
374	HRDEX93	Cancer
375	HRDFK37	Cancer
376	HRGBD54	Cancer
377	HROEA08	Cancer
378	HSAVA08	Immune/Hematopoetic
379	HSAVW42	Cancer
380	HSAWN53	Immune/Hematopoetic
381	HSAWZ40	Immune/Hematopoetic
382	HSAYC41	Excretory, Immune/Hematopoetic, Reproductive
383	HSDZM54	Cancer
384	HSHBF76	Cancer
385	HSIFG47	Digestive
386	HSJBY32	Immune/Hematopoetic, Musculoskeletal, Neural/Sensory
387	HSKDR27	Cancer
388	HSLHG78	Cancer
389	HSLHX15	Musculoskeletal
390	HSNAP85	Cancer
391	HSNAZ09	Cancer
392	HSNBM34	Digestive
393	HSOAH16	Digestive
394	HSQBF66	Cancer
395	HSQDO85	Cancer
396	HSQES57	Cancer
397	HSRBE06	Cancer
398	HSSDI26	Musculoskeletal
399	HSSEA64	Cancer
400	HSSEF77	Cancer
401	HSSFE38	Cancer

402	HSSGJ58	Musculoskeletal
403	HSWBE76	Cancer
404	HSXCP38	Cardiovascular, Neural/Sensory
405	HSYBI06	Cancer
406	HT1SC27	Digestive, Immune/Hematopoetic, Reproductive
407	HT3BF49	Immune/Hematopoetic
408	HT4FV41	Cancer
409	HT5FX79	Cancer
410	HT5GR59	Cancer
411	HTAEI78	Immune/Hematopoetic
412	HTDAA78	Cancer
413	HTEAG62	Digestive, Immune/Hematopoetic, Reproductive
414	HTECB02	Cancer
415	HTECC15	Cancer
416	HTEDF18	Reproductive
417	HTEDJ28	Cancer
418	HTEDS12	Cardiovascular, Immune/Hematopoetic, Reproductive
419	HTEED26	Cancer
420	HTEED26	Cancer
421	HTEEF26	Cancer
422	HTEEF26	Cancer
423	HTEEW69	Reproductive
424	HTEGS07	Reproductive
425	HTEGS11	Cancer
426	HTEHA56	Cancer
427	HTEHU59	Cancer
428	HTEJD29	Reproductive
429	HTEKM46	Cancer
430	HTEMQ17	Cancer
431	HTENR63	Cancer
432	HTGGM44	Immune/Hematopoetic, Musculoskeletal
433	HTHBZ06	Cancer
434	HTLAP64	Cancer
435	HTLBT80	Cancer
436	HTLDA84	Reproductive
437	HTLDN29	Cancer
438	HTLDU78	Reproductive
439	HTLEC82	Cancer
440	HTLEM16	Cancer
441	HTLEV48	Reproductive
442	HTLFA13	Musculoskeletal, Reproductive
443	HTLFI73	Cancer
444	HTLGI89	Cancer
445	HTLIF11	Cancer
446	HTLIF12	Excretory, Reproductive
447	HTLIF12	Excretory, Reproductive

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448	HTLIF12	Excretory, Reproductive
449	HTLIF12	Excretory, Reproductive
450	HTLIF12	Excretory, Reproductive
451	HTLIF12	Excretory, Reproductive
452	HTNAM63	Endocrine
453	HTNBK13	Cancer
454	HTOAI50	Immune/Hematopoetic
455	HTOAM11	Immune/Hematopoetic, Neural/Sensory
456	HTODH57	Immune/Hematopoetic
457	HTODH83	Immune/Hematopoetic
458	HTOEV16	Cancer
459	HTOGR38	Immune/Hematopoetic
460	HTOHO21	Immune/Hematopoetic
461	HTOHQ05	Immune/Hematopoetic
462	HTOJL95	Cancer
463	HTOJL95	Cancer
464	HTPDU17	Cancer
465	HTSFJ32	Immune/Hematopoetic
466	HTTCB60	Cancer
467	HTTEE41	Cancer
468	HTTEZ02	Cancer
469	HTWEH94	Immune/Hematopoetic
470	HTXBD09	Cancer
471	HTXDB22	Cancer
472	HTXDC38	Cancer
473	HTXDC77	Cancer
474	HTXDD61	Cancer
475	HTXDG92	Cancer
476	HTXET11	Immune/Hematopoetic
477	HTXFA72	Immune/Hematopoetic
478	HTXJY08	Cancer
479	HTXKF95	Cancer
480	HTXMZ07	Cancer
481	HUFCL31	Digestive, Immune/Hematopoetic
482	HUKBT67	Cancer
483	HUKDF20	Cardiovascular, Reproductive
484	HUKDY82	Cancer
485	HUSCJ14	Cancer
486	HUSGL67	Cancer
487	HUSGU40	Cancer
488	HUSIR18	Cancer
489	HUVDJ48	Digestive, Reproductive
490	HWAAI12	Cancer
491	HWBBQ70	Immune/Hematopoetic, Neural/Sensory
492	HWBCN36	Immune/Hematopoetic
493	HWBDJ08	Cancer
494	HWBFX16	Immune/Hematopoetic
495	HWDAC26	Connective/Epithelial,

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		Immune/Hematopoetic, Neural/Sensory
496	HWDAG96	Cancer
497	HWDAJ01	Connective/Epithelial
498	HWHPB78	Cancer
499	HYABC84	Cancer
500	HYABC84	Cancer

[120] Table 1E provides information related to biological activities and preferred indications for polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof). Table 1E also provides information related to assays which may be used to test polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) for the corresponding biological activities. The first column ("Gene No.") provides the gene number in the application for each clone identifier. The second column ("cDNA Clone ID No:Z") provides the unique clone identifier for each clone as previously described and indicated in Tables 1A, 1B, 1C, and 1D. The third column ("AA SEQ ID NO:Y") indicates the Sequence Listing SEQ ID Number for polypeptide sequences encoded by the corresponding cDNA clones (also as indicated in Tables 1A, 1B, and 2). The fourth column ("Biological Activity") indicates a biological activity corresponding to the indicated polypeptides (or polynucleotides encoding said polypeptides). The fifth column ("Exemplary Activity Assay") further describes the corresponding biological activity and also provides information pertaining to the various types of assays which may be performed to test, demonstrate, or quantify the corresponding biological activity. The sixth column ("Preferred Indictions") describes particular embodiments of the invention as well as indications (e.g. pathologies, diseases, disorders, abnormalities, etc.) for which polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) may be used in detecting, diagnosing, preventing, and/or treating.

[121] Table 1E describes the use of, inter alia, FMAT technology for testing or demonstrating various biological activities. Fluorometric microvolume assay technology (FMAT) is a fluorescence-based system which provides a means to perform nonradioactive cell- and bead-based assays to detect activation of cell signal transduction pathways. This technology was designed specifically for ligand binding and immunological assays. Using this technology, fluorescent cells or beads at the bottom of the well are detected as localized areas of concentrated fluorescence using a data processing system. Unbound flurophore comprising the background signal is ignored,

allowing for a wide variety of homogeneous assays. FMAT technology may be used for peptide ligand binding assays, immunofluorescence, apoptosis, cytotoxicity, and bead-based immunocapture assays. *See*, Miraglia S et. al., "Homogeneous cell and bead based assays for highthroughput screening using flourometric microvolume assay technology," Journal of Biomolecular Screening; 4:193-204 (1999). In particular, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides (including polypeptide fragments and variants) to activate signal transduction pathways. For example, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides to upregulate production of immunomodulatory proteins (such as, for example, interleukins, GM-CSF, Rantes, and Tumor Necrosis factors, as well as other cellular regulators (e.g. insulin)).

[122] Table 1E also describes the use of kinase assays for testing, demonstrating, or quantifying biological activity. In this regard, the phosphorylation and de-phosphorylation of specific amino acid residues (e.g. Tyrosine, Serine, Threonine) on cell-signal transduction proteins provides a fast, reversible means for activation and de-activation of cellular signal transduction pathways. Moreover, cell signal transduction via phosphorylation/de-phosphorylation is crucial to the regulation of a wide variety of cellular processes (e.g. proliferation, differentiation, migration, apoptosis, etc.). Accordingly, kinase assays provide a powerful tool useful for testing, confirming, and/or identifying polypeptides (including polypeptide fragments and variants) that mediate cell signal transduction events via protein phosphorylation. See e.g., Forrer, P., Tamaskovic R., and Jaussi, R. "Enzyme-Linked Immunosorbent Assay for Measurement of JNK, ERK, and p38 Kinase Activities" Biol. Chem. 379(8-9): 1101-1110 (1998).

TABLE 1E

Gene No.	cDNA Clone ID	AA SEQ ID NO: Y	Biological Activity	Exemplary Activity Assay	Preferred Indications
1	H6BSF56	515	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic

					anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
2	H6EDM64	516	Insulin Secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Aditional highly preferred indications are complications associated

				of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	with insulin resistance.
3	H6EEC72	517	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases

				and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	(e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
4	HACAB68	518	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and	Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred

				agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
4	HACAB68	518	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below

				85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
4	HACAB68	518	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et	A highly preferred embodiment of the invention includes a method for stimulating endothelial cell growth. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell growth. A highly preferred embodiment of the invention includes a method for stimulating endothelial cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating apoptosis of endothelial cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) apoptosis of endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) endothelial cell activation.

				al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) the activation of and/or inactivating endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating angiogenisis. An alternative highly preferred embodiment of the invention includes a method for inhibiting angiogenesis. A highly preferred embodiment of the invention includes a method for reducing cardiac hypertrophy. An alternative highly preferred embodiment of the invention includes a method for inducing cardiac hypertrophy. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the cardiovascular system (e.g., heart disease, congestive heart failure, hypertension, aortic stenosis, cardiomyopathy, valvular regurgitation, left ventricular dysfunction, atherosclerosis and atherosclerotic vascular disease, diabetic nephropathy, intracardiac shunt, cardiac hypertrophy, myocardial infarction, chronic hemodynamic overload, and/or as described below under "Cardiovascular Disorders"). Highly preferred indications include cardiovascular, endothelial and/or angiogenic disorders (e.g., systemic disorders that affect vessels such as diabetes mellitus, as well as diseases of the vessels themselves, such as of the arteries, capillaries, veins and/or lymphatics). Highly preferred are indications that stimulate angiogenesis and/or cardiovascularization. Highly preferred are indications that inhibit angiogenesis and/or cardiovascularization. Highly preferred indications include antiangiogenic activity to treat solid tumors, leukemias, and Kaposi's sarcoma, and retinal disorders. Highly preferred indications include neoplasms and cancer, such as, Kaposi's sarcoma, hemangioma (capillary and cavernous), glomus tumors, telangiectasia, bacillary angiomatosis, hemangioendothelioma, angiosarcoma, haemangiopericytoma, lymphangioma,

					lymphangiosarcoma. Highly preferred indications also include cancers such as, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Highly preferred indications also include arterial disease, such as, atherosclerosis, hypertension, coronary artery disease, inflammatory vasculitides, Reynaud's disease and Reynaud's phenomenom, aneurysms, restenosis; venous and lymphatic disorders such as thrombophlebitis, lymphangitis, and lymphedema; and other vascular disorders such as peripheral vascular disease, and cancer. Highly preferred indications also include trauma such as wounds, burns, and injured tissue (e.g., vascular injury such as, injury resulting from balloon angioplasty, and atheroschlerotic lesions), implant fixation, scarring, ischemia reperfusion injury, rheumatoid arthritis, cerebrovascular disease, renal diseases such as acute renal failure, and osteoporosis. Additional highly preferred indications include stroke, graft rejection, diabetic or other retinopathies, thrombotic and coagulative disorders, vascularitis, lymph angiogenesis, sexual disorders, age-related macular degeneration, and treatment /prevention of endometriosis and related conditions. Additional highly preferred indications include fibromas, heart disease, cardiac arrest, heart valve disease, and vascular disease. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional preferred indications include inflammation and inflammatory disorders (such as acute and chronic inflammatory diseases, e.g., inflammatory bowel disease

					and Crohn's disease), and pain management.
4	HACAB68	518	Activation of Skeletal Mucle Cell PI3 Kinase Signalling Pathway	Kinase assay. Kinase assays, for example an GSK-3 kinase assay, for PI3 kinase signal transduction that regulate glucose metabolism and cell survivial are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cells that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and striated fibers after culture in differentiation media.	A highly preferred embodiment of the invention includes a method for increasing muscle cell survival An alternative highly preferred embodiment of the invention includes a method for decreasing muscle cell survival. A preferred embodiment of the invention includes a method for stimulating muscle cell proliferation. In a specific embodiment, skeletal muscle cell proliferation is stimulated. An alternative highly preferred embodiment of the invention includes a method for inhibiting muscle cell proliferation. In a specific embodiment, skeletal muscle cell proliferation is inhibited. A preferred embodiment of the invention includes a method for stimulating muscle cell differentiation. In a specific embodiment, skeletal muscle cell differentiation is stimulated. An alternative highly preferred embodiment of the invention includes a method for inhibiting muscle cell differentiation. In a specific embodiment, skeletal muscle cell differentiation is inhibited. Highly preferred indications include disorders of the musculoskeletal system. Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), endocrine disorders (e.g., as described below under "Endocrine Disorders"), neural disorders (e.g., as described below under "Neural Activity and Neurological Diseases"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity"), and infection (e.g., as described below under "Infectious Disease"). A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g, due to

					diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, infections (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance. Additonal highly preferred indications are disorders of the musculoskeletal system including myopathies, muscular dystrophy, and/or as described herein. Additional highly preferred indications include: myopathy, atrophy, congestive heart failure, cachexia, myxomas, fibromas, congenital cardiovascular abnormalities, heart disease, cardiac arrest, heart valve disease, and vascular disease. Highly preferred indications include neoplasms and cancer, such as, rhabdomyoma, rhabdosarcoma, stomach, esophageal, prostate, and urinary cancer. Preferred indications also include breast, lung, colon, pancreatic, brain, and liver cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, hyperplasia, metaplasia, and/or dysplasia.
5	HACBJ56	519	Regulation of viability and proliferation of	Assays for the regulation of viability and proliferation of cells in vitro are well-	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication

			pancreatic beta cells.	known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al.	associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Aditional highly preferred indications are complications associated with insulin resistance.

				Endocrinology 1992 130:167.	
6	HACBS22	520	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Vascular Disease, Atherosclerosis, Restenosis, Stroke, and Asthma.
7	HADDE71	521	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be	A highly preferred indication is allergy. Another highly preferred indication is asthma. Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described

				used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	below under "Hyperproliferative Disorders"). Preferred indications include neoplasms, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease").
8	HADDJ13	522	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the	A highly preferred indication is allergy. Another highly preferred indication is asthma. Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms, such as, for example,

				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease").
8	HADDJ13	522	Activation of transcription through GAS response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and

				antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatosus disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
8	HADDJ13	522	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. An additional highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example,

				include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
9	HADMB15	523	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment

				fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362–368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.	(e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Aditional highly preferred indications are complications associated with insulin resistance.
9	HADMB15	523	Regulation of apoptosis of immune cells (such as mast cells).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention,

				assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000);Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.	and/or treatment of asthma, allergy, hypersensitivity and inflammation.
9	HADMB15	523	Activation of Natural Killer Cell ERK	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal	A highly preferred embodiment of the invention includes a method for stimulating natural killer cell

			Signaling Pathway.	transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.	proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating natural killer cell differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell differentiation. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity") and infections (e.g., as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include cancers such as, kidney, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, urinary cancer, lymphoma and leukemias. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Other highly preferred indications include, pancytopenia, leukopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), arthritis, asthma, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, immune reactions to transplanted organs and tissues, endocarditis, meningitis, Lyme Disease, and allergies.

10	HAGBQ12	524	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol	A highly preferred embodiment of the invention includes a method for stimulating the production of IFNg. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of IFNg. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatosus disease and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia,

				15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
11	HAGDW20	525	Upregulation of HLA-DR and activation of T cells	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and alternatively, suppressing a T cell-mediated immune response. A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as

				polypeptides of the invention (including antibodies and agonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Aditional highly preferred indications are complications associated with insulin resistance. Additonal highly preferred indications are disorders of the musculoskeletal systems including myopathies, muscular dystrophy, and/or as described herein. An additional preferred indication is infection (e.g., AIDS, and/or as described below under "Infectious Disease"). Preferred indications include endocrine disorders (e.g., as described below under "Endocrine Disorders"), and neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancer, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, endocarditis,

					meningitis, Lyme Disease, inflammation and inflammatory disorders, and asthma and allergy.
12	HAGEG10	526	Activation of transcription through GAS response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatosus disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and

					allergy.
13	HAGEQ79	527	Activation of transcription through GAS response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatosus disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.

13	HAGEQ79	527	Upregulation of HLA-DR and activation of T cells	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and alternatively, suppressing a T cell-mediated immune response. A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Aditional highly preferred indications are complications associated with insulin resistance.

				incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Additonal highly preferred indications are disorders of the musculoskeletal systems including myopathies, muscular dystrophy, and/or as described herein. An additional preferred indication is infection (e.g., AIDS, and/or as described below under "Infectious Disease"). Preferred indications include endocrine disorders (e.g., as described below under "Endocrine Disorders"), and neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancer, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, endocarditis, meningitis, Lyme Disease, inflammation and inflammatory disorders, and asthma and allergy.
14	HAGFS57	528	Proliferation, differentiation, and/or cytokine production in immune cells (such as T-cells).	Kinase assays, for example kinase assays for members of the MAP kinase family (including p38, JAK, and ERK) are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, differentiation., and/or cytokine production in immune cells such as T-cells. Exemplary assays for MAP kinase family members that may be used	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of inflammation, infection, allergy, asthma, autoimmunity, and cancer.

				or routinely modified to test polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Rincon M., Curr Opin Immunol; 13(3):339-345 (2001); Wang LH, et al., J Immunol, 162(7):3897-3904 (1999); Sakamoto H, et al., J Biol Chem, 275(46):35857-35862 (2000), the contents of each of which are herein incorporated by reference in its entirety. Exemplary immune cells (for example, T-cells) that may be used according to these assays include the mouse CTLL cell line.	
14	HAGFS57	528	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferrred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders.Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described

				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additonal preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
15	HAGHN57	529	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated

				modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).	immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
15	HAGHN57	529	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes.	A highly preferred indication is allergy. Another highly preferred indication is asthma. Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below).

				Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease").
15	HAGHN57	529	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. An additional highly preferred indication is infection (e.g., an infectious

				response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	disease as described below under "Infectious Disease"). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
16	HAHEA15	530	Upregulation of CD69 and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of	A highly preferred embodiment of the invention includes a method for activating T cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting the activation of and/or inactivating T cells. A highly preferred embodiment of the invention includes a method for activation B cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting the activation of and/or inactivating B cells. A highly preferred embodiment of the invention includes a method for activating NK cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting activation of

				the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	and/or inactivation NK cells. Highly preferred indications include inflammation and inflammatory disorders (e.g., as described below under "Immune Activity"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response and alternatively suppressing a T cell-mediated immune response, and boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. An additional highly preferred indication includes infection (e.g., as described below under "Infectious Disease"). Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, inflammation and inflammatory disorders, asthma, and allergies. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
17	HAJAA47	531	Production of TNF	TNFa FMAT. Assays for	A highly preferred embodiment of the invention

			alpha by dendritic cells	immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein	includes a method for inhibiting (e.g., decreasing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosis, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An

				or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
17	HAJAA47	531	Activation of transcription through the EGR (Early Growth Response) element in immune cells (such as B-cells).	Assays for the activation of transcription through the EGR response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate EGR transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the EGR response element that may be used or routinely modified to test EGR response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Richards JD, et al., J Immunol, 166(6):3855-3864 (2001); Dinkel, A, et al., J Exp Med, 188(12):2215-2224 (1998); and, Newton, JS, et al., Eur J Immunol 1996 Apr;26(4):811-816 (1996), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the Raji B-cell line.	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Cancer, Autoimmunity, Allergy and Asthma.
18	HAJAY92	532	Activation of transcription through GAS response element	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention,

			in immune cells (such as monocytes).	known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gustafson KS, et al., J Biol Chem, 271(33):20035-20046 (1996); Eilers A, et al., Immunobiology, 193(2-4):328-333 (1995); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the U937 cell line, which is a monocytic cell line.	and/or treatment of Inflammation, Infection, Cancer, Hypersensitivity, and Atherosclerosis.
19	HAJBV67	533	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure,